CIVIL FUNCTIONS, DEPARTMENT OF THE ARMY APPROPRIATIONS, 1953

WEDNESDAY, MAY 14, 1952

UNITED STATES SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, D. C.

The subcommittee met at 11 a. m., pursuant to recess, in room F–39, the Capitol, Hon. Kenneth McKellar (chairman) presiding.
Present: Senators McKellar, Hayden, Cordon, and Cain.

CORPS OF ENGINEERS

RIVERS AND HARBORS PROGRAM AND FLOOD CONTROL

STATEMENT OF LIEUTENANT GENERAL LEWIS A. PICK, CHIEF OF ENGINEERS

WHITNEY RESERVOIR, BLUM, TEXAS

Chairman MCKELLAR. The committee will come to order.

I will ask the gentlemen who have been requested to come this morning to wait on us for just a few minutes. General Pick, the Chief of Engineers, is here and has a matter that has come to his attention which he would like to present to the committee. It will take about 3 minutes.

Gneral PICK. Mr. Chairman and members of the committee, I appear here this morning in the interest of a small town down in Texas known as Blum, Tex., which is located within the area of the Whitney Reservoir, which is nearing completion.

Mr. Chairman, the reason I am here this morning is because the funds being asked to complete this project are all in this year's bill. This particular small village had a railroad passing through it. The railroad, because of the building of the dam and the reservoir had to be moved across to the other side of the Nolands River, which runs past the town.

Their railroad station was located on the other side of this small river, three-quarters of a mile from the village. Under the law, there is no way for the Corps of Engineers to provide funds to give them access to their railroad station. The law authorizing the dam and the general flood control law will not permit the expenditure of ordinarily appropriated funds for this particular purpose.

However, I think it is a hardship case, and I think that under the circumstances access to the railroad should be provided these people

by the Government, because they have no other way of providing it, and this small town will be completely cut off from access to their railroad station unless they are given an access road over to it.

Senator CAIN. May I ask the required and/or recommended sum of money for this purpose?

ACCESS ROAD

General PICK. Yes, sir. I have some language here which, I believe, if it were included in the civil functions bill this year, would take care of the situation. It reads as follows:

Provided that $125,000 of the funds appropriated herein may be used for providing a suitable access road from the town of Blum, Tex., to the Gulf, Colorado & Santa Fe Railroad station, relocated in connection with the construction of the Whitney Dam and Reservoir project.

Chairman MCKELLAR. Are there any further questions?

Senator CORDON. Mr. Chairman, may I ask the general a question?

Chairman MCKELLAR. Yes, sir.

Senator CORDON. I notice that in the language it is provided that $125,000 out of the money otherwise appropriated to finish the job be used for this purpose. Do you feel that the job can be finished, including this access road, for the amount in the bill?

General PICK. No, sir. I meant that any of the funds appropriated herein can be used for that purpose. You would have to add $125,000 to the $175,000, which will complete the project, sir.

Senator CORDON. Does your language provide for that?

General PICK. I am told, sir, that this language is all right.

Chairman MCKELLAR. Well, the Senator from Oregon is a very excellent lawyer, and I will ask you to allow him to look at that language. Suppose you show him the language.

Senator CORDON. Thank you, Mr. Chairman.

The language then proposes that we add $125,000 to the budget estimate, as I understand it. Is that correct, General?

General PICK. That is correct, sir.

Senator CORDON. I think we have enough in the record to understand the situation.

Chairman MCKELLAR. All right, sir. We are very much obliged to you. The matter will be brought to the attention of the committee and your proposed amendment will be included by the reporter in the record.

General PICK. Thank you very much, Mr. Chairman.

COLUMBIA RIVRR BASIN

STATEMENT OF CLIFFORD A. ERDAHL, CHAIRMAN, PACIFIC NORTHWEST UTILITIES CONFERENCE COMMITTEE, AND COMMISSIONER OF PUBLIC UTILITIES, TACOMA CITY LIGHT CO.

POWER PHASE OF PACIFIC NORTHWEST PROJECTS

Senator CORDON. Mr. Chairman, there is a group of citizens here from the Pacific Northwest headed by Governor Langlie of Washington and Governor McKay of Oregon, and including the Adminis-

trator of the Bonneville Administration, Dr. Raver, and representatives of public and private power interests in the Pacific Northwest. They are here today to appear before the subcommittee; and in a discussion amongst themselves they have arrived at the decision to have Mr. Clifford A. Erdahl, commissioner of public utilities of the public power agency of the city of Tacoma, Wash., of which our Member of the committee here, Senator Cain, at one time, I believe, was mayor, actually open the hearing for the group from the Pacific Northwest with an over-all statement and thereafter identify the other witnesses, if that is satisfactory to the Chairman.

Chairman McKellar. Without objection, that will be done.

Mr. Erdahl, will you come around and have a seat, sir?

Senator Cordon. There are a few people here representing the press from the Pacific Northwest and the area that is vitally interested in the testimony to be given. I express the hope—and I am sure the Senator from Washington will join me—that they might be permitted in the hearing, although generally we deem them to be executive hearings.

Senator Cain. I share that wish, sir.

Chairman McKellar. All right, go ahead, Mr. Erdahl.

Mr. Erdahl. Senator McKellar and members of the committee: As Senator Cordon brought out, we are here again this year as we were last year as a group, public power, private power, and the Federal Government agencies that have the responsibility for the Pacific Northwest power supply. Joining us this year, as Senator Cordon stated, are Governor Langlie of Washington and Governor McKay of Oregon.

We are trying to present our case to the Senate as best we can to point up the real problem, the real issue that we have collectively. We have our ideological differences. We have our individual problems, and we deal with them. But on this problem of power supply we feel that we have a partnership program to work out, and we must work it out together regardless of these ideological differences. We are trying our best to do that so that you will have as clear-cut a picture as is possible for us to give you as to what we think are the Federal Government's responsibilities in the Pacific Northwest.

Now, because we have a joint statement I think I should read that, and I think it will set the stage for the whole hearing. If you gentlemen wish to interrupt as we go along or if you prefer to wait until we are through, just as you like, it will not make any difference.

As to those questions that I do not feel qualified to answer, we have, of course, quite a group of utility people here who are listed on the sheet which I think has been provided for you, and I will present them from time to time. In fact, I think possibly it will be very nice if I do it now so that if there are any questions, we can handle them as we go along.

I wonder if first Governor McKay, of Oregon, will stand and let the Senators see who you are.

Chairman McKellar. Governor, we are pleased to have you with us.

Mr. Erdahl. Governor Langlie, of Washington.

Chairman McKellar. Governor, we are glad to see you here.

Mr. Erdahl. Dr. Paul Raver, Administrator of the Bonneville Power Administration.

Irvin R. Woods, president of the Washington State Public Utility Districts Association.

Allan A. Smith, counsel for the Mountain States Power Co. and the Pacific Power & Light Co.

Donald R. McClung, Vice President of the Pacific Power & Light Co.

R. F. Plymire, general commercial manager of the Puget Sound Power & Light Co.

Frank M. Warren, executive vice president, Portland General Electric Co.

Ralph H. Millsap, vice president, Portland General Electric Co.

Owen W. Hurd, president, Northwest Public Power Association.

Bob Jones, councilman and chairman of city utilities, Seattle City Light Co.

J. Frank Ward, superintendent of the light division, Tacoma City Light Co.

M. L. Blair, superintendent of system operations of the Washington Waterpower Co. of Spokane.

A. H. Wegner, manager of rates and economic research of the Washington Waterpower Co.

That pretty well outlines our group, Mr. Chairman.

Senator CORDON. Mr. Chairman, following these gentlemen there are some real native Americans here from the Umatilla Indian Reservation, among them, Mr. Leland Brown, attorney representing the Warm Springs Indians, who desire to be heard.

Chairman MCKELLAR. We have a short session this year, it being an election year; and we will ask you to be as brief as you can. We want you to give us all of the facts, but still not to take up anymore time than is necessary. I am sure you will do that.

I am wondering whether this is a question similar to one that we had in Tennessee some years ago, when an agreement was arrived at between the power companies and the State and the Federal Government as to the distribution of power and light from the Tennessee Valley.

Mr. ERDAHL. I am not entirely familiar with that.

Chairman MCKELLAR. We made a general agreement then. We can determine that after you read your statement.

Mr. ERDAHL. Senator, I feel that if we went through the points in the statement that when we have finished with the statement we will have pretty well finished with the hearing, as I see it. That procedure worked quite well last year, and with your permission, we will do that.

Chairman MCKELLAR. All right, proceed.

NORTHWEST POWER POOL

Mr. ERDAHL. The Pacific Northwest Utilities Conference Committee which appears with me represents substantially all of the non-Federal electric power utilities of the western group of the Northwest power pool. The Government of the United States is also in the power business along with us in the Northwest through the Corps of Engineers of the Army and the Bureau of Reclamation as the largest generators of hydroelectric power in our area and the Bonneville Power Administration as their transmission and marketing agency. Present Federal power capacities in the area exceed substantially the com-

bined resources of all non-Federal utilities, so that in effect the Federal Government is a majority stockholder.

This relationship may long continue, since capacities proposed for installation in Federal multipurpose projects already authorized and under construction far outweigh the capacities available at sites which non-Federal utilities are now developing or which they may in the future be permitted to develop, within reasonable economic limits.

POTENTIAL HYDROELECTRIC POWER

Out of an estimated 34 million kilowatts of potential hydroelectric power capacity in the Columbia River system, only an approximate 10 percent has so far been realized. In fact, the Bonneville Dam and Grand Coulee plants are the only major Federal projects completed and in operation.

The Northwest power pool was voluntarily inaugurated in 1942 as a war measure to integrate and synchronize all important Federal and non-Federal hydro- and fuel-fired power capacity to meet defense needs.

All utilities serving the Northwest public are dependent upon the Federal power system as the major supplier of the area. Demands upon those utilities serving Washington, northern Idaho, and the more populous areas of western and northern Oregon have been critical throughout the winter months, and will continue to be so for a period of years.

The western group pool utilities came to the Congress in the early spring of 1947 and have appeared here in every session since then with one basic objective.

Our objective has been to lay before Congress a picture of what we are doing to help ourselves, what the regional need for power is, and what must be done to provide additional Federal capacity in local and national interest.

I may say that while congressional appropriations have been large and, no doubt in the individual thinking of some of you, generous, it is nonetheless true that the Federal program has slipped behind the requirements of the region year after year.

POWER INCREMENT NEEDED

From our combined system load growth charts including the Federal system, we know that over a period of years our western group area requires an increment of 500,000 kilowatts annually just to provide for normal load growth. Our estimate of kilowatts of capacity require additionally each year does not take into account any additional capacity for large aluminum or other critical defense loads which the Government or others may wish to take on. Present schedules of construction fall short of meeting that requirement by approximately 100,000 kilowatts per year. This annual deficit must be piled on top of existing deficits, and the situation may very well be made worse by adverse water conditions, mechanical failures, lawsuits, strikes, and a multiplicity of factors that cannot be predicted.

We do not expect the Federal program to provide all of the 500,000 kilowatts annually required for load growth in the area, but we hope that we may expect the Federal Government to fulfill its responsibility.

The non-Federal utilities are attempting to provide the largest possible share themselves, up to the limit of their available sites and financial resources. Their proposed construction will provide approximately 1,500,000 kilowatts, which is in the schedules referred to.

Now, on that particular point, the amount of money the non-Federal utilities have spent in the area in the last 15 years, that is, the 10 years just passed and the 5 years into the future, of course estimated, is quite a figure. I think you gentlemen have that before you in this single sheet.

INVESTMENT BY NON-FEDERAL UTILITIES

Actually, when we total the utilities that are in the power pool, that is, the Washington Waterpower Co., the Pacific Power & Light Co., the Portland General Electric Co., the Tacoma City Light, the Seattle City Light, the Mountain States Power Co., the Puget Sound Power & Light Co., and the public utility districts and cooperatives in the western group of the Northwest power pool, we find a toal for that 15-year period to be $1,031,260,799. That is the amount of money the non-Federal utilities, Senator, have spent in the area to see that the utilities' responsibility is met in the Northwest. We think it is an important figure to remember, because we are not asking the Federal Government to do the whole job. We feel as though this is a partnership and that the Government, however, must meets its share of the responsibility or we have to arrive at something new by way of a solution to solve this problem of increasing deficiencies year by year.

We are not back here to scold you, but we want to discuss the problem with you to see whether we cannot come up with the best possible answer, something that is dependable.

There is the further fact, Senator, that hydro projects cannot be set up in a year's time. They must be planned 5 years ahead of time, as you well know, and, of course, that calls for additional long-range planning.

Chairman McKellar. Let me ask you this question: What is the effect of the House action upon this? Did you go before the House?

Mr. Erdahl. We went before the House, and the House acted on it. My statement shows the effects of the House cuts in our area and how they will add to the deficiencies, Senator.

Senator Cain. Mr. Chairman, I would ask, sir, that the table to which the witness has just made reference become a part of the record in order that we will have available to us the breakdown of the particular items.

Chairman McKellar. Without objection, that will be placed in the record.

(The table referred to follows:)

Pacific Northwest Utilities Conference Committee, capital expenditures for additions of individual utilities and public utility districts

Utility	Actual		Estimated, 1952 to 1956, inclusive	Total, 1941 to 1956, inclusive
	1941 to 1946, inclusive	1947 to 1951, inclusive		
Washington Water Power Co	$7,655,973	$38,630,000	$44,538,000	$90,823,973
Pacific Power & Light Co	9,628,157	46,657,740	44,520,400	100,806,297
Portland General Electric Co	11,532,479	37,146,321	100,000,000	148,678,800
Tacoma City Light	27,227,168	14,008,333	179,060,530	220,296,031
Seattle City Light	19,994,555	56,000,000	70,000,000	145,994,555
Mountain States Power Co	7,114,727	22,303,649	21,750,000	51,168,376
Puget Sound Power & Light Co	20,910,954	31,981,813	30,000,000	82,892,767
Public utility districts and cooperatives, western group, Northwest power pool	(1)	55,100,000	135,500,000	[2] 190,600,000
Total	104,064,013	301,827,856	625,368,930	1,031,260,799

[1] Not available.
[2] Partial.

EFFECT OF HOUSE ACTION ON POWER SHORTAGE

Mr. ERDAHL. Because hydroelectric projects require so much time to complete, we have recently undertaken to look 10 years ahead to estimate future electric power needs, and we see the same situation facing us 10 years from now as we face at present if the Federal program continues to slip as it has in the past.

We have appeared before a subcommittee of the House. While we are not concerned as a group with individual projects, we are concerned that the House has imposed appropriation cuts that will cause still greater slippage.

On the basis of House action the western group of the Northwest power pool faces shortages on the basis of critical water amounting to 700,000 kilowatts in the high load winter season of 1953–54, 352,000 kilowatts in 1954–55, 275,000 kilowatts in 1955–56, and 404,000 kilowatts in 1956–57. This is after making use of all possible existing resources.

We met with Mr. Fairman of the Defense Electric Power Administration and his staff last Friday to discuss this situation, and in an attempt to plan on how to deal with this problem. We found our estimates as to resources and loads in agreement.

We will be confronted every winter with the threat of industrial cutbacks, lost payrolls, and increased unemployment due to inadequate power supply, notwithstanding that all our resources are coordinated in the greatest power pool in the world. Such actual curtailment has been experienced and is a continuing threat involving loss of production in vital national materials and equipment. Fortuitous arrival of rains at most critical moments has prevented long stretches of idleness in key industries.

The power pool by use of its diversity of resources makes available 600,000 kilowatts more than the bare machine ratings of the system. Disintegration of the system at any time results in the loss of the 600,000 kilowatts gained from coordinated operation.

This gain is essential to all utilities, including the Federal system, as a basic area resource. Without it, installed capacity would have to be increased by an amount equal to another Bonneville Dam power plant.

CONSTRUCTION SCHEDULES

We are concerned with maintenance of construction schedules of new generating capacity and the related transmission and substation facilities, because all are a part of the system over which the pool operates.

As I pointed out to you gentlemen last year, there isn't a great deal that you can do to relieve the pressure upon us this coming fall and winter. We face a serious deficit in power throughout this coming peak season, just as we faced it last year and the year before. Our luck has held with us. Some day it may run out. When it does, as it is certain to do in the basic nature of things, the result is going to be bad—bad for us and bad for America. The decisions made in this session of the Congress will more particularly concern what kind of a situation we face 2 to 5 years or more from now, and the 5 years following, since the projects we need take years to complete.

LOAD GROWTHS

Our individual utilities are experienceing load growths of from 11 to 30 percent annually. Hydropower, as we have often shown, is our regional energy base. Half our coal and all of our oil must be imported from other areas. Hydropower is our natural asset. Our economy is geared to it. We have no oil or natural gas resources as yet developed or assured.

If we were doing nothing for ourselves and came pleading for Federal aid, we might have a weak case to offer. But most of the major non-Federal utilities are augmenting their present resources with new construction. Altogether these non-Federal projects add up to about 1½ million kilowatts on streams tributary to the Columbia. We are spending many millions of dollars upon our own systems. Be assured that private enterprise and local public enterprise are hard at work on this problem. We are asking that our Federal partner hold up his end of the load. He has not been doing that and he has started to sumble again.

It has been charged that we in the Pacific Northwest are pushing these Federal projects for the purpose of luring industries and people away from other areas of the country. It is a charge not based on fact. The fact is, that it is most difficult either to invite or to hold new industry without an adequate power supply. We cannot say that we have had an adequate power supply since 1946, just at the close of the war. Since then we have lost to other regions a substantial number of industrial plants that we would like very much to have on our lines now. In spite of this, our population continues to increase. We need to insure employment for this expansion in population. Business is generally competitive and goes where the combinations of economic factors are most advantageous. To this extent the Pacific Northwest is in competition with all other industrial areas of the Nation.

POWER SHORTAGE ACUTE

While others are providing for their power needs for more than 5 years ahead, we are required to sit back in fearful anticipation of approaching winter year after year, wasting power downstream by

millions of kilowatts, scheming out ways and means of keeping our industrial plants going and homes lighted in event of low-water conditions long overdue and accepting no new industries requiring prime power the year around. We do not exaggerate the present situation in light of appropriation cuts made by the House, that we may very shortly be required to put all power users on a curtailed use basis from September 1 to November 15, drop all interruptible load around the clock for as long as 7½ months of each year, use all high-cost steam power available, and even then call upon all our public to share in the restriction.

One by one, old schedules of new Federal generation have been scrapped and new schedules set up. Now, unless restorations are made in appropriations needed to maintain at least a minimum of new generation in projects long since past serious controversy, those under construction by the Corps of Engineers, we must face a bleak future indeed.

The question is one of straight and simple economics. With half a million kilowatts of new generation held up in the past and with the possibility that three-quarters of a million kilowatts may be lost in the event of a critical water year, the utilities of the area including the Federal system will not be able to do the job that must be done.

The Senate on the advice of its committees was our bulwark last year in restoration of essential funds for projects under construction in the area, and we are hopeful that you will be as strong in support this session.

We respectfully urge the Senate to restore the essential budget items that will keep projects going on schedule.

As chairman of this group, I wish to acknowledge the committee's warm appreciation of the courtesies extended to us in this hearing, Mr. Chairman. It is not easy for all of us to make this journey across the continent, and you have been most helpful in suiting the hearings to our convenience. We will be happy to give our best information if there are any questions. Thank you very much.

HOUSE CUT OF CIVIL FUNCTIONS BILL

Chairman McKellar. I would like to ask this question: The Budget Bureau recommended the amount of $169,850,000, and the House cut that amount to $103,500,000, a cut of $66,350,000. Are those the correct figures?

Mr. Erdahl. I am sure you have the correct figures, Senator.

General Chorpening. Those figures are correct, Mr. Chairman.

Chairman McKellar. And it is the purpose of your appearance before the committee to urge the Senate to restore the cut made by the House?

Mr. Erdahl. We have to have a restoration of those cuts in order to keep up with the schedules in the area; that is correct.

Chairman McKellar. I remember that when I introduced the first bill on this subject, what was known as the Federal water power bill, a bill to build the dam at Muscle Shoals, Ala., just across the Tennessee River in Alabama, people said that it was exceedingly doubtful that water could be made to create electricity. It seems as if they were mistaken.

You have a whole lot of power in your section of the country, and you are using it to good advantage. In addition, it is being furnished at a reasonable price, is it not?

Mr. ERDAHL. That is right. Of course, you give me a wonderful opportunity to brag about God's country, Senator.

Chairman MCKELLAR. I am glad to hear that, because I supported the western Senators in establishing these dams out there, and I feel very proud about that.

Mr. ERDAHL. It is the most wonderful section of the United States.

Chairman MCKELLAR. Wait a minute. I know it is a great section. I have been out there.

PERCENTAGE OF UNITED STATES POWER

Mr. ERDAHL. We have in our area 40 percent of the hydro potential in the United States. That potential presents us with a problem. It is very low cost power, and it is a natural resource that we should take full advantage of. However, it does put us up against a difficult problem and puts us somewhat behind the eight ball because we must plan further ahead. We cannot wait until the loads are there and then find some ways to meet them. This is a 5-year and a 10-year plan. You gentlemen know that as well as or much better than I.

PLANNING FUNDS

Chairman MCKELLAR. The House took the action of cutting out all planning money. I take it that you would recommend that those funds be restored?

Mr. ERDAHL. We have found, Senator—and I speak for the committee—that in dealing with the Senate there are continuously some controversial items. We have put this picture before you on the basis of the requirements of the electric utilities. We feel that if, in the judgment of the Congress, the House or the Senate, there are items in there, after listening to all of the interested parties, that you feel are so controversial that you do not want to deal with them, we urge you to come up with new plans and new programs as rapidly as possible so that we can have the kilowatts necessary to meet the requirements of the area.

Chairman MCKELLAR. You say that on the average it takes about 5 years to get a project started after getting the planning done.

Mr. ERDAHL. That is true. It takes roughly a minimum of 5 years, and on some of these larger dams to fully complete them and put them into full operation, with all of the generators, it takes, of course, much longer than that.

We are dealing with the problems, as I stated. There is nothing that we can do or that the Congress can do for this coming winter season. That is the reason why we are back here meeting with the defense agencies to determine how best to deal with our problem under adverse water conditions, to determine what loads are to be served and what loads are not to be served in our area.

That is the kind of problem we have there. We don't have enough power now to take care of all of the needs of all of the people in our area if we should have less than average water in our streams in the Northwest.

Chairman McKellar. The normal increase is about 500,000 kilowatts per year in this area?

Mr. Erdahl. That is right. That applies to the western group.

Chairman McKellar. And that growth is attributable to the business enterprises and the residents?

Mr. Erdahl. It is just the normal load growth, not taking into consideration the Federal Government's desire, from the standpoint of national defense, to possibly put in additional large blocks of load in that area. We have some Federal installations out there that have plans of their own, and those for the most part are classified. We don't have that information, so we want to make it very clear that we are presenting our plan and our program based on what we know to be the load growth problem, and that it will be necessary to add on top of that the requirements contained in the classified information that you get from the defense agencies to determine what we are going to have to do in the way of a job in the next 5 years, shall we say.

NORTHWEST POWER STUDY

Now, we have just completed a study, a 10-year program, out in the Northwest. We have all worked on it, that is, the Federal, the public, and the private agencies. We have gone over it with the Federal Power Commission and the Defense Electric Power Administration.

Gentlemen, unless we get a speed-up in the program out there, we are going to be in tough straits for years to come.

The non-Federal utilities have done their level best. They are trying to do more, but that is quite a sizable figure even to you, Senator, that figure of $1,031,260,799, and I am sure that it is very impressive.

Chairman McKellar. It certainly is. All right, sir. Are there any questions, gentlemen?

Senator Cordon. Mr. Chairman, I think the group would like to have Mr. Erdahl identify the successive witnesses, if that is satisfactory to the Chair.

Mr. Erdahl. I will be most happy to do so.

Chairman McKellar. Before that is done, I want to ask Mr. Erdahl this question: Does this same general application apply to both the States of Oregon and Washington? Is the whole area affected?

Mr. Erdahl. The western group of the Northwest power pool, Senator.

Chairman McKellar. That takes in what States?

Mr. Erdahl. All of the State of Washington, the northern part or the panhandle of the State of Idaho, and most of the State of Oregon, that is, I think, two-thirds, Senator, I would say.

Senator Cordon. At least two-thirds.

Chairman McKellar. All right, sir, go ahead.

Senator Cain. If the Senator from Oregon does not presently have any questions and before other witnesses are called, I should like, Mr. Chairman, to interrogate the witness against his statement, if I may.

Chairman McKellar. Certainly, go ahead.

COOPERATIVE EFFORT OF NORTHWEST POWER UTILITIES

Senator CAIN. First, I would like to say, Mr. Chairman, and for the record, that the presence here today of the Pacific Northwest Utilities Conference Committee is, in my view, sir, an unusual and singular example of how men who support different and sometimes contrary points of view concerning the generation and distribution of power can work in harmony with each other and with the Federal Government for the common good of one of the outstanding and great regions of this country.

In your presence this morning are those that have long been devoted to public power, on the one hand, and private power, on the other. I know of no situation in America where those divergent views, or at times divergent views, are so much in harmony as is demonstrated this morning.

Mr. Erdahl, your statement infers to me that you believe that other members of the committee not present this morning know more about the Pacific Northwest and its needs than is my view. For that reason, I wish you would respond more fully to some of the references you made in your statement, please.

On page 1, in the middle of the first paragraph, you say:

> Present Federal power capacities in the area exceed substantially the combined resources of all non-Federal utilities, so that, in effect, the Federal Government is a majority stockholder.

I believe that the committee will be interested in knowing what percentage of the total power capacity is presently being supplied by the Federal agencies.

Mr. ERDAHL. From the standpoint of generation in the area, as I recall it, the last figure was 52 percent approximately that the Federal Government generates, while the rest is generated by the non-Federal utilities.

Senator CAIN. Further on in that paragraph you say:

> This relationship may long continue, since capacities proposed for installation in Federal multipurpose projects already authorized and under construction far outweigh the capacities available at sites which non-Federal utilities are now developing or which they may in the future be permitted to develop, within reasonable economic limits.

FEDERAL POWER DEVELOPMENT

Will you give us a few words by further explanation of that. You have already established for the record that presently some 52 percent of the power generated in the Northwest is under Federal supervision. That leaves 48 percent for the non-Federal facilities, both public and private. Will you project that into the future against your sentence and tell us where we are going percentagewise.

Mr. ERDAHL. Generally, the statement covers this point: That the Federal Government is doing the development, up to this point at least, on the main system. Those are the larger dams. The non-Federal utilities have confined themselves pretty much to the tributaries or the smaller dams that they can develop and can finance through their bond processes or procedures.

So if the present plans of the Army engineers and of the Bureau of Reclamation go forward and the Congress gives them sufficient funds, why, we couldn't possibly keep up that pace and retain that

same percentage. But I want to repeat again that the non-Federal utilities are doing everything they possibly can where they can. I am sure that this figure of $1,031,000,000 bears that out.

Senator CAIN. In terms of power, you have stated that the Columbia River is only presently developed to the extent of about 10 percent. Is there anticipated a future time in the Pacific Northwest when the percentage differences between power generation as it concerns the Federal Government and the non-Federal agencies will be more nearly 90 and 10 percent than is presently the case as stated by you, the relationship being 52 to 48 percent? Are we headed in the direction of a monopoly of power in the Northwest for purely economic reasons by the Federal Government? If you think this is not the place to reflect on that subject, let me say that my colleagues are very much concerned.

Mr. ERDAHL. If you will allow me to answer the question as I see it.

Senator CAIN. Certainly, sir.

Mr. ERDAHL. Then when I get to the wind-up of this I would like to call on the balance of the committee to add anything that they might want to add, because this statement that I have presented we have agreed to 100 percent. Now I don't want to say something in trying to speak for the committee that might make the record a little different than it should be. When they present their statements, if they have anything additional, if the Senators will be kind enough to permit them to do so, I would like to have them add anything by way of clarification or anything additional that they may have.

Chairman MCKELLAR. We will be glad to have that done.

Mr. ERDAHL. There have been statements in the Northwest that the Federal Government has preempted certain sites or certain sections. I don't know whether that is so or not. The Federal Government is in the power business in a big way through the construction of these dams by the Army Engineers and the Bureau of Reclamation and through the distribution of that power by the Bonneville Power Administration.

I might put it this way: If the Federal Government through the Congress does not meet the load growth in the area, gentlemen, we must find a way to get into it on a non-Federal basis in a bigger way. I mean that the Congress will be forcing us to do that, because we have the public utility responsibility in the Northwest and we must face it. We are hoping that you will do your share as the United States Government in facing that part which would naturally be your share of this responsibility.

COLUMBIA BASIN DEVELOPMENT

Senator CORDON. Mr. Erdahl, you are familiar with the basin studies that have been made by the agencies of the Federal Government, the Corps of Engineers, and the Bureau of Reclamation. Those studies were coordinated studies, were they not? That is, they were not a single study made in the field of flood control and navigation, let us say, and not a single study made in the field of reclamation. But the two agencies first coordinated their field work and the results of that field work.

Mr. ERDAHL. That is as I understand it.

Senator CORDON. The plan for the development of the Columbia Basin powerwise is a part of the plan, is it not, to develop that basin reclamationwise, flood-control-wise, and navigationwise?

Mr. ERDAHL. That is correct.

Senator CORDON. So that there is a series or a group of benefits to be achieved from the Federal development which could not be achieved by any series of developments by private capital.

Mr. ERDAHL. Well, I don't know if that is entirely so. I am only familiar with the project that we propose to build, Senator, and as to that we have to get clearance through the Army engineers, through the Federal Power Commission, and we have to provide for that navigation benefits and the flood-control benefits.

The Army, through the Federal Power Commission, tells us exactly how we shall run our reservoirs to provide those flood benefits. So I think the same rule applies whether or not it is Federal.

I think that if we should build a plant on the Columbia—and I use that as an example—I am sure that we would be required by the Corps of Engineers to provide for those same flood-control benefits as if the Federal Government were building the project.

Senator CORDON. I am quite sure—well, in fact there is no question about that in my mind. You and I will also be in agreement on the proposition that when you seek to provide them on the huge scale necessary when you are handling water such as comes down the Columbia River you have a pretty sizable problem in private financing on your hands.

Mr. ERDAHL. That is true. That has been the problem up to now. However, may I remind you gentlemen that $1 billion gets into pretty good size figures.

Senator CORDON. That is right.

NORTHWEST DEPENDENT ON FEDERAL POWER SYSTEM

Senator CAIN. These questions by both the Senator from Oregon, the chairman, and myself are propounded in an effort to anticipate some of the requirements of the future.

Mr. Erdahl, in the first sentence of your last paragraph on page 1, you say:

> All utilities serving the Northwest public are dependent upon the Federal power system as the major supplier of the area.

Would you broaden that sentence a bit, please.

Mr. ERDAHL. Well, that is for the very reason of the 52 and the 48 percent, Senator. I don't recall offhand whether there is any utility in the Northwest at the present time that has enough generating capacity to take care of all of their needs. We depend upon Bonneville in varying degrees of percentages.

If I recall my figures correctly, one of the utilities out there depends on Bonneville to the extent of 70 percent. I am talking about the major utilities. Of course, some of the smaller ones depend upon Bonneville for all of their supply. But some of the major ones depend to the extent of as much as 70 percent.

I think Mr. Ward told me before we left that we are getting about 25 percent of our power supply from Bonneville at the present time over and above what we generate ourselves. That is, in effect, in my statement.

Senator CAIN. Thank you. I understood you to testify that the Pacific Northwest anticipates an annual increase of 500,000 kilowatts a year for at least the next decade.

Mr. ERDAHL. The loads and resources subcommittee of this particular committee represented here has made a very careful study for the Federal Power Commission under Defense Electric Power Administration. That was just completed previous to our coming back, and that is the combined thinking of all of our group. We think that that is the amount it is going to take for our normal load growth.

We want to keep reminding you gentlemen that that does not allow for any large blocks of new load that might be brought out there for defense reasons of any kind.

Senator CAIN. In that connection, may I ask whether the Federal Government pursues the custom of conferring with the Pacific Northwest Utilities Conference Committee before a decision is made here in Washington to allocate a large block of power to some defense industry or to some other business which one or another branch of the Federal Government decides shall locate in the Pacific Northwest?

Mr. ERDAHL. We have a voluntary set-up, and it worked quite effectively; but, as I understand it now, the Federal Government has, through one of its defense agencies, a clearing house on that for beyond 2,000-kilowatt loads. So all new loads above 2,000 kilowatts must be cleared, Federal and non-Federal, at the present time through this Federal agency.

Senator CAIN. Mr. Erdahl, you have, from your own point of view—and I am not fully prepared to understand it—repeatedly suggested that the Federal Government or the Federal program of appropriations for power development in the Pacific Northwest has slipped.

FEDERAL CONSTRUCTION SCHEDULES

I would like you to give a further explanation of your views in that instance. As against the figures, staggering as they were, that you have inserted for the record, I want to draw to your attention the fact that from 1946 through fiscal 1952 the Interior Department has had appropriated to it for the benefit of power, among other uses, in this area $405,376,227, while during the same period the Corps of Engineers has had appropriated to it $321,231,600. Is it your view that as the percentages 52 to 48 now, the Federal Government ought to assume as its responsibility the responsibility for future power needs and requirements on that percentage or on any other future percentage which may grow ever larger on the Federal side of the picture?

Mr. ERDAHL. Well, I don't know that I can answer that on the basis of those percentages, Senator. I feel this way: As I stated before, the non-Federal utilities are doing all they possibly can and are doing everything they possibly can and loading themselves down with obligations to the maximum extent possible. In some cases we have been delayed because of litigation, and so forth, in getting certain projects started.

But the Federal Government has taken on some of these dams, and the schedules I referred to are schedules that we have tried to depend

on. Going back 5 years, shall we say, when the Bonneville Power Administration had a schedule——

Dr. Raver, your schedule was at what point in the alphabet then?

Dr. RAVER. Around Q.

Mr. ERDAHL. Now it has gone from Q to R, from R to S, from S to T, from T to U. What we are trying to do, Senator, is to get this back on schedule before we run out of the alphabet and we have to go to double A's and so forth.

Senator CAIN. Is Dr. Raver, to whom you have just made reference the proper witness to ask about the seemingly ever-changing status of these schedules in question?

Mr. ERDAHL. I am sure Dr. Raver could explain it more fully.

Senator CAIN. You are looking for a schedule which can be relied upon by both the Federal Government and the non-Federal suppliers of power in the Pacific Northwest?

Mr. ERDAHL. That is correct.

POWER NEEDS

Senator CAIN. Mr. Erdahl, you have said that our annual need for, let us say, the next 10 years in the Pacific Northwest is 500,000 kilowatts of power per year. Ten times 500,000 kilowatts would make 5 million kilowatts. Have you any way of prophesying within reason what percentage of that additional 5 million kilowatts of power will be provided by the non-Federal suppliers of power over the next decade?

Mr. ERDAHL. I can't answer that unless we make a review of the utilities that are here. I can only refer to quite a sizable installation by the non-Federal utilities totaling 1,500,000 kilowatts that is being developed or has already been built by the non-Federal utilities.

Senator CAIN. If the chairman will permit it, later on, at your convenience, if you will draft a memorandum on your anticipated power requirements over the next 10-year period, it would be helpful, I think, to the committee.

Chairman MCKELLAR. Without objection, that will be done.

Mr. ERDAHL. I will see that that is done.

10-YEAR LOADS AND RESOURCES PROGRAM

Senator CAIN. Mr. Erdahl, you mention on page 3 that you and your associates [reading]—

> met with Mr. Fairman of the Defense Electric Power Administration and his staff last Friday to discuss this situation and in an attempt to plan on how to deal with this problem. We found our estimates as to resources and loads in agreement.

How are these estimates prepared? By whom were they prepared?

Mr. ERDAHL. They were prepared by a subcommittee of this committee that is here represented, and one representative from each of the utilities that are listed in the compilation of those figures.

Those figures were checked when completed and forwarded to the Federal Power Commission and the Defense Electric Power Administration. We have reviewed those figures with Dr. Raver and his staff of the Bonneville Power Administration; and I can say, from the standpoint of the Federal Power Commission, the Defense Electric

Power Administration, the Bonneville Power Administration, and all of the public and private utilities, that the 10-year loads and resources program that we have developed is one that we are in accord on.

Senator CAIN. Thank you, sir.

You have mentioned in your statement "the threat of industrial cut-backs, lost payrolls, and increased unemployment due to inadequate power supply" as being of continuing concern to all of you. You further mention that curtailment has been experienced.

Would you give us a word or two on how serious that curtailment has recently been or is likely to be in the near future?

Mr. ERDAHL. It hasn't been as serious as we are afraid it is going to be for the reason for the last 5 or 6 years we have been working on this program as cooperatively as we appear here today, we have had average water conditions or better-than-average water conditions. The only thought that we have in that connection is you can't have average water every year and still have average water; some place along the line you are going to drop below average, and when we go below average, that is when we are going to have the serious situation.

However, let me point out, Senator, that last winter we were prepared for cut-backs, and there was some cut-back for the heavy industrial aluminum loads in the area. Further than that, there was a mechanical failure out there about 2 months ago at Grand Coulee Dam at which time 700,000 kilowatts were dropped off the line immediately. We had a pretty rough time hanging together.

Fortunately, with the cooperation of the Northwest power pool, we were able to hold together and drop the loads that could be dropped for the short period of time required to put those generators back on the line.

I want to say from my standpoint that I think this really shows the real value that we have and feel for the people in our area. When our friends are in trouble, public, private, or Federal, whoever it may be, we help each other out and solve the problem.

Senator CAIN. You have answered part of the next question which I had in mind, and its full answer will be of real and keen interest to my colleagues, I know. You mentioned that—

> the power pool, by use of its diversity of resources, makes available 600,000 kilowatts more than the bare machine ratings of the system.

Then you go on to infer that, were it not for the pooling of these resources, you would require another facility the size of Bonneville.

Mr. ERDAHL. That is correct.

NORTHWEST POWER POOL

Senator CAIN. Would you broaden out that power-pool arrangement just a bit?

Mr. ERDAHL. Well, I wish that I could call one of our experts back here to explain that more fully. But, just briefly, if this is sufficient, we have diversity of time in the power pool. We have diversity in the watersheds in our power pool, as large as it is. By shifting of our power from one to another—for instance, Mr. Ward informed me just before we left that in our reservoir we have some water that belongs to us, we have some water that belongs to Bonneville, we have some water that belongs to Seattle City Light. It is because they can store

the water there while the conditions between our respective reservoirs are balanced out, so that the maximum kilowatts are brought out of all of these dams for the use of the area as a whole.

We are taking full advantage by jockeying our power back and forth between the utilities, to see that the minimum of water is spilled over the spillways. Of course, that naturally would not happen if we had isolated systems.

We are all agreed that we get a maximum diversity advantage of 600,000 kilowatts. If we were split up into individual utility operations, we would lose that much and would be able to provide that much less power for the area.

Senator CAIN. Mr. Chairman, Mr. Erdahl has just said—and I should like to emphasize this, sir—that this pooling arrangement actually results in the availability of 600,000 precious kilowatts of power, which, were these respective utilities going their own independent ways, would not be available and would have to be made up by new construction from some source.

EFFECT OF YEAR-TO-YEAR POWER PROGRAM

Mr. Erdahl, on page 5, you have a statement that is interesting to me, anyway—it is in the beginning of your second paragraph, where you state:

> While others are providing for their power needs for more than 5 years ahead we are required to sit back in fearful anticipation of approaching winter, year after year.

Will you explain what you mean by "others" being in a position to plan, as, assumedly, you are not?

Mr. ERDAHL. Well, with the Federal Government in the picture in the percentage they are, namely, 52 percent at the present time, in the Northwest, the statement that we hope to get over there is this: that we appreciate that the Corps of Engineers and the Bureau of Reclamation are dependent upon year-by-year appropriations by the Congress. We don't want to leave a wrong impression. We think you fellows have been very fine and considerate of our program out there. But what we wanted to impress upon you is that we don't have a definite program for 5 years or 10 years into the future, as we would if we had a definite program or plan or the money set aside and the Corps of Engineers, for instance, would know they not only would have enough money to run it this year, but next year, and next year, and next year, and next year, so we would know that at the end of 5 years the Corps of Engineers, assuming they were correct in their estimates, would have a power plan on the line.

We were talking the other night—and I don't want to get out of character at all or to leave the wrong impression—these gentlemen here of the Army have all of these figures, much better than I—but there have been delays; there have been delays in connection with McNary Dam. We have had delays on the Albeni Falls Dam. We have had delays on every one of the dams in the Northwest of from 1 to 4 years from the time that they were originally authorized by the Congress, and from the time the original schedule appears. Now, with those delays, you can see how we are getting into a power shortage that is more critical every year.

Now, if the Corps of Engineers could have a 10-year program and be assued of the funds to keep them on schedule—I am not criticising the Army Corps of Engineers, you gentlemen know better than I that they have been cut in appropriations at different times, to cause the delay in the schedule. It hasn't been because their estimates weren't set up correctly in the first place.

CURTAILMENT OF POWER SERVICE

Senator CAIN. Thank you, sir. In the same paragraph you give us a very alarming statement, which in part says this:

> We may shortly be required to put all power users on a curtailed-use basis from September 1 to November 15, drop all interruptable load around the clock for as long as 7½ months of each year, use all high-cost steam power available, and even then, call upon all of our public to share in the restriction.

Would you paint that picutre a little more firmly?

Mr. ERDAHL. Based on critical water this coming year, if I recall the figures correctly, we will be short 672,000 kilowatts in the peak. We will be short 150,000 kilowatts firm in the adverse water conditions this coming winter.

Now, those adverse water conditions present some real problems, because sometimes we go from September through to November before we know if we are going to have adverse water or if we are going to have median water, or if we are going to have better than average water. The operators do a wonderful job, but they just can't look into the crystal ball that far, and know what kind of a problem they are going to have. So we have set it up on the basis of 672,000 kilowatts short, which will call for all of the interruptible load to be dropped off the Bonneville system for the most part. Then, of course, we will have to burn all of the high-cost steam, not knowing whether we are going to have critical water or not. Then we will have to call upon our public to share in the restriction, to see if we can save as many jobs for people out there, as possible.

Senator CAIN. I have just two more questions, please.

At the top of page 6, you make this statement:

> With half a million kilowatts of new generation held up in the past—

would you tell us what period of time that covers, and precisely the way in which that half a million kilowatts were held up and prevented from coming on the line?

Mr. ERDAHL. That is the accumulation of the delays that I referred to, the delays at Albeni Falls, the delays at McNary, the delays at all of these dams, where we have had losses in scheduling. There was a delay on Hungry Horse Dam by the Bureau of Reclamation. As a result of the accumulation of those delays we have lost half a million new kilowatts of new generation. Those are the delays of the Federal Government from 1 to 4 years.

Senator CAIN. Because you and your associates have been here before, I have reason to believe that you think this committee particularly, has a very sympathetic interest and regard for the concerns out in the Pacific Northwest. This is not a question, but it is an observation, more out of anguish and agony, than anything else.

Our Nation presently is trying to determine how many things it can support and construct within the capacity of the Nation's economy to remain healthy.

It has just recently come to the attention of all of us that our projected Federal spending figures will have exceeded our present statutory debt limit of $275,000,000,000 within a period—this is my own guess—of less than 18 months. That is a staggering possibility, because we don't know what we will do about it.

I do know that later on before this committee, competent testimony will be given which will let us know in detail for the first time how many new projects, of what kind and size and where situated, have in this last 5-year critical period of ours, been undertaken, if meritoriously, perhaps, without considered judgment all around the world. Portions of that testimony will be helpful to this committee and the Senate, in trying to determine how best to use the tax resources which are available to the Nation. I thought you and your friends would like to know of our concern and thinking about that.

Mr. ERDAHL. Senator, I want to say that I feel that this committee has not only been very sympathetic, but also very understanding of our problem out there. You have dealt with it in a very real way. We are not back here to try and tell the Federal Government that they should keep building up these public works projects.

I don't know, but there has been talk in the past—and if the Congress ever gets to the point where they feel as though that is just the wrong way to handle it, maybe they could set the stage for us, and have us go up to New York and get the money from Wall Street to do it, why, that will be fine and dandy. But we have a public utility responsibility, and we must meet that public utility responsibility. The public is going to demand it and they are going to insist on it. We can't sit there and watch our people be unemployed because of the lack of power supply and then pay out of the coffers—we are not going to save any money in that way, as I am sure you gentlemen will agree.

MEETING POWER SUPPLY DEMAND

So, we have that responsibility of meeting the power supply for the area, collectively, and we want to present our picture on that basis, and see if we cannot be most helpful in that partnership that we have in solving the problem. I am sure you gentlemen understand that picture.

Senator CAIN. Mr. Erdahl, some of us in Congress think that if distressingly there must be shortages of power somewhere on the face of the earth, the time is somewhat overdue when we ought to start making those shortages happen somewhere else, rather than in this country, as the trend has been in immediate years gone by.

Mr. ERDAHL. On your comment, Senator, may I say that I think we might help the United States balance its budget if you were to give us all the power we need. This power business isn't bad business once you get into it. If you give us all the power and all the money we need to build these power plants, we might be able to do a pretty good job in helping to balance the budget by sending in some revenue from the area out there. The people out there are willing to spend the money and they are willing to develop the projects. If we could have a chance, we will do our level best to help.

I know it is a big and an important problem. I don't mean to take it lightly.

Senator CAIN. That is a healthy reply by the witness. I thank the witness for his testimony.

Mr. ERDAHL. Mr. Chairman, may I proceed by calling on these various individuals?

Chairman MCKELLAR. I want to know whether Senator Cordon had any questions. He says he has not, so you just proceed.

Mr. ERDAHL. Thank you. I thought that if we could we would go through the list of the group. Some of them have statements that they might like to put into the record. I will ask each one of them, if they have any particular comments, to please make them briefly, and then the committee will have a full and complete understanding of our problem.

I wonder, because there were some questions that came up that were more in Dr. Raver's field than they were in mine, and because the Senator has some questions, I might ask Dr. Raver whether he has a statement that he would like to make to the committee, please.

Chairman MCKELLAR. Dr. Raver, will you come forward?

STATEMENT OF PAUL J. RAVER, ADMINISTRATOR, BONNEVILLE POWER ADMINISTRATION

POWER REQUIREMENTS OF PACIFIC NORTHWEST

Mr. RAVER. Mr. Chairman, in order to save time, I would be very happy to file my statement and submit myself to you and the members of the committee for any questions you may desire to ask.

Chairman MCKELLAR. Without objection, that will be done.

(The statement referred to follows:)

STATEMENT OF PAUL J. RAVER, ADMINISTRATOR, BONNEVILLE POWER ADMINISTRATION

The Bonneville Power Administration has met with the Pacific Northwest Utility Conference Committee to discuss the power supply situation in the Pacific Northwest region in light of the action of the House of Representatives on the civil functions appropriation bill. The deficiencies indicated by the representatives of the committee do not take into account the requirements of the Hanford Works of the Atomic Energy Commission. The requirements of the AEC present two problems which have to be met. One is the quality of electrical service and the other is additional power for a proposed expansion.

We have made an analysis of the various methods by which the Atomic Energy load at Hanford Works might be adequately served. I have furnished the Chairman of the Appropriations Committee with a copy of a classified letter from the Atomic Energy Commission which sets forth their electric power requirements. The Manager of the Atomic Energy Commission's Hanford plant has made it clear to us that he expects the Bonneville Power Administration to take care of their needs and in so doing to provide the quality of service which would assure uninterrupted continuity of electric power to Hanford. Three possible plans of service have been developed which do assure the necessary quality of electric service to Hanford. These, along with a table of comparative costs, are as follows:

Plan A. Ice Harbor

This method of service to Hanford utilizes the generation at Ice Harbor Dam to supply the increased requirements of the AEC. Small transmission additions are included to permit this power to be supplied into the 230 kilovolt loop at a suitable point thus providing the desired degree of reliability of service. Costs used for Ice Harbor generation are those applying prior to the construction of additional upstream storage and are based on a 67 percent plant factor.

Plan B. Steam plant at Hanford with back-up transmission from McNary Dam

Install adequate steam generating facilities at some appropriate location on the Hanford reservation. This steam plant will be operated on an approximate 50 percent plant factor which would coordinate economically with hydro generation on the system thus increasing firm power of the region. To assure adequate emergency reliability to AEC at such times when the steam plant is not in operation, an additional 230 kilovolt circuit from McNary Dam to the AEC 230 kilovolts system would be needed.

Plan C. Steam plant at a coastal load center with back-up transmission from McNary, Dam

Install adequate steam generating facilities remote from Hanford reservation at some appropriate location on the Bonneville system and supply transmission back-up to Hanford from McNary Dam as in plan B. This plan would permit the region to take advantage of transmission benefits due to the strategic location of the steam plant. By utilizing the Federal transmission grid it is possible to operate this steam plant at approximately 50 percent plant factor.

Cost to Federal Government of System additions chargeable to AEC load

Source of power	Investment	Annual requirements [1]
Plan A Ice Harbor and System Hydro	[2] $102,015,000	$4,730,000
Plan B Steam at Hanford	[3] 44,400,000	7,710,000
Plan C Steam on coast	[4] 43,900,000	5,430,000

[1] Includes interest, amortization, replacement, maintenance and operation cost including fuel.

[2] Includes:

Ice Harbor	[a] $74,150,000
System Hydro	26,200,000
Transmission back-up	1,665,000
Total	102,015,000

[3] Includes:

Steam plant	42,200,000
Transmission back-up	2,200,000
Total	44,400,000

[4] Includes:

Steam plant	41,700,000
Transmission back-up	2,200,000
Total	43,900,000

[a] Does not include $33,550,000 allocated to other purposes.

In summary, the Bonneville Power Administration's studies of loads and resources in the Northwest over the next 5 years have included Ice Harbor Dam in the resources because it was an authorized project closest to the Hanford area and had been recommended for construction as early as 1949. Furthermore, all possible new generation is required to take care of estimated loads in the Pacific Northwest without the addition of any heavy industrial loads. Even with the provision of Ice Harbor Dam serious shortages will exist.

Last year, when Congress failed to approve appropriations for Ice Harbor, our ability to take care of our loads was reduced by the capability of that project, almost 200,000 kilowatts. This situation was made even worse when we were informed recently that there was to be an increase (the amount of the increase in AEC load is classified information which has been furnished to the chairman of the committee) over previously estimated loads of the atomic energy plant at Hanford. This increase had not been included in the Pacific Northwest loads. Therefore, this year Bonneville Power Administration recommended very strongly that Ice Harbor be resubmitted to Congress, and agreed that with the restoration of this plant the Administration would take care of the increased load at Hanford. However, if Ice Harbor is not restored, the Administration cannot undertake to serve the additional Hanford load because such service would be at the expense of contractual commitments to other loads in the area. The only alternative is to construct new steam generation. It is our understanding that the capacity for manufacturing steam turbines is so fully loaded that additional steam generating facilities for Hanford could be provided only be displacing equipment now scheduled for other parts of the country. Hydro manufacturing capacity on the other hand is reported to be less critical. There is no practical alternative to the

immediate construction of Ice Harbor Dam if the expansion of the atomic energy load at Hanford is to be provided with a satisfactory amount and source of power. Therefore any alternative which does not provide additional new generation will seriously cripple the power supply of the Pacific Northwest and will result in cutbacks to industrial defense loads, private utilities and the public customers in the region.

INSTALLATION OF POWER GENERATORS IN FEDERAL PROJECTS

Senator CAIN. I have one question, if I may, sir?

Chairman MCKELLAR. Certainly.

Senator CAIN. Dr. Raver, Mr. Erdahl in testifying, said this: "One by one old schedules of new Federal generation, have been scrapped, and new schedules set up."

Can you give the committee a little advice and counsel on that portion of your total problem?

Mr. RAVER. Yes, sir. The schedules referred to are schedules of installation of generators in Federal projects, and also in non-Federal projects. Those schedules are prepared in cooperation with the Corps of Engineers, Bureau of Reclamation, and all of the utilities, publicly and privately owned, of the area, that have under way or planned, generating facilities.

We make those schedules up each year as a part of a plan for the benefit of our customers, as well as for the benefit of Congress in considering the requests for appropriations.

The latest schedule appears in the House records of the civil functions hearings, on page 855.

Senator CAIN. Thank you, sir.

Chairman MCKELLAR. Are there any other questions?

All right, sir. We are very much obliged to you, Dr. Raver.

Will you call your next witness?

Mr. ERDAHL. Next I would like to call on the President of the Washington State Public Utility Districts Association, Mr. Irvin R. Woods.

STATEMENT OF IRVIN R. WOODS, PRESIDENT, WASHINGTON STATE PUBLIC UTILITY DISTRICTS' ASSOCIATION

POWER GENERATION AT NORTHWEST DAM PROJECTS

Mr. WOODS. Mr. Chairman, and members of the committee, due to the large number of us who are here and because of the shortness of your time, I would like to submit my statement for the record. I will be happy to answer any questions, but other than that, I will simply submit my statement for the record.

Chairman MCKELLAR. The statement will be placed in the record at this point.

(The statement referred to follows:)

STATEMENT OF IRVIN R. WOODS, PRESIDENT, WASHINGTON PUBLIC UTILITY DISTRICTS' ASSOCIATION

My name is Irv Woods. I am commissioner of the Okanogan County Public Utility District No. 1 in the State of Washington. I also serve as president of the Washington Public Utility Districts' Association, which association is comprised of membership from 29 county utility districts serving over 190,000 water and electric customers throughout the State of Washington. This statement is submitted in support of appropriations for the Army civil functions and while it is

done to a considerable degree in self-interest, we have, at least to an equal extent, a genuine interest in national security.

The public utility districts of Washington are county-level, public power agencies operating under the State of Washington power law. A large part of the electricity distributed by these districts is generated by Federal dam installations and purchased through the Bonneville Power Administration. These purchases give us a direct and friendly interest in the Federal power program in the Northwest. In this area, which contains over a third of the Nation's potential hydroelectric power resources, there is a most urgent need for continuing orderly construction of facilities, so that these resources be harnassed for the use of the region, for defense, and as a permanent addition to our national productivity.

We ask you to remember that less than half of the generation of Grand Coulee and Bonneville dams goes to the public and privately owned utilities of the Pacific Northwest. The remainder goes directly to the electric process industries and military establishments including the Hanford atomic energy works. The seemingly endless need in our defense effort and our economy for aluminum, light metals, and electric process chemicals leaves us perennially short of generation. A large part of these high electric consuming industries are new and would not be in existence except for cheap electricity. It was the farsightedness of Congress in the late 1930's which, through the Bonneville and Grand Coulee Dam projects, actually furnished a stockpile of the national resource of electric energy. This stockpile permitted the Pacific Northwest area to contribute greatly to the needs of the Nation during World War II and, in today's defense needs, the same farsightedness should prevail. The Pacific Northwest is geographically isolated and its population is comparatively small and is not sufficient, as a market, to sustain itself. Outside markets are necessary. It is far distant from large population centers where its products must be marketed. Because of the resulting high freight rates on the incoming raw materials and on the outgoing finished products, Washington industries are generally not competitive with industries operating in large population centers. However, industries requiring large quantities of electrical energy will be competitive providing that power is abundant and cheap. The need for such industries to supply new jobs, new opportunities and new economic wealth, must be recognized and will be realized only if there is a vast increase in available low-cost electric energy.

Without Chief Joseph or The Dalles construction being maintained on schedule, our hope of meeting our needs, regionally or in defense production, is completely lost. Further, Ice Harbor, which is also before your committee, is the only new start included in the budget requests of the Pacific Northwest. We hope you do not overlook for one moment Ice Harbor's strategic location in relation to the Hanford atomic energy project.

If we were requesting total contributions for these projects from Congress there might be some doubt in your wisdom in granting these appropriations; but, as you know, the Federal Government Columbia River development is not only more than paying its own way and returning substantial net revenues, but has had a tremendous impact on Pacific Northwest economy.

We are proud of what we have done in this region. We know that much of it has been done with tax money from other regions, but we also know that we are serving the entire country with the fruits of this power program.

In conclusion, we urge that the Army civil-functions appropriation, requested in the Bureau of Budget recommendations for these Northwest projects, be treated as a very minimum.

Chairman McKellar. Are there any questions?

Senator Cain. Your testimony means, then, Mr. Woods, that in your view, Mr Erdahl has adequately presented the case for the Pacific Northwest?

Mr. Woods. He has covered it.

Mr. Erdahl. Thank you, Mr. Woods.

At this point, Mr. Chairman, I wonder whether we could ask the Governors of the two States to come up and present their side of the story at this point. Then I will call on the balance of our witnesses.

Chairman McKellar. That will be perfectly all right.

Mr. Erdahl. Governor McKay and Governor Langlie, will you come up forward, please?

Chairman McKellar. Which one will be first?

STATEMENT OF HON. ARTHUR B. LANGLIE, GOVERNOR OF THE STATE OF WASHINGTON

ADEQUATE FINANCING OF NORTHWEST POWER PROJECTS

Governor LANGLIE. We travel together out there pretty well, Mr. Chairman.

Senator CAIN. Mr. Chairman, how did the Governors of North and South Carolina resolve such differences?

Chairman MCKELLAR. They did that amongst themselves.

Senator CAIN. May I say that the senior Senator from Washington is very privileged, sir, and very proud, to be in the presence of the Governor of the State of Washington, Mr. Arthur B. Langlie, who always has something constructive and positive to contribute.

I know that we will benefit from his presence, and that of his colleague, the Governor of the State of Oregon.

Governor LANGLIE. Thank you, Senator Cain. It is a privilege to be before this committee. We out there are, as has been said, very concerned about this power situation, because we have a tremendous power deficit in the area.

As it has been pointed out, we have been very fortunate in having sufficient rain these last few years at the appropriate times, to make it possible to go from one emergent condition to another, hoping that our construction of power facilities would catch up with the need and the demand. We know that we are sitting on a keg of dynamite constantly, if we should run into an adverse water year.

Now, it affects not only our region, but it affects the entire country.

Chairman MCKELLAR. Governor, may I interrupt you there to ask this question?

Governor LANGLIE. Yes, sir.

Chairman MCKELLAR. When was your last unusual flood year in your State?

Governor LANGLIE. It was about 5 or 6 years ago. Did you say "flood" or "deficit"?

Chairman MCKELLAR. I am asking about the flood first.

Governor LANGLIE. We had a flood in 1948 that was very, very damaging. The last low water years were 1936 and 1937 and we are due now for a low-water year. When we do get it, it could mean that we would be short of enough power to supply Seattle, Tacoma, and the Puget Sound area, where our heaviest population is located.

That represents a very serious picture.

Now, Mr. Erdahl has pointed out here that the private and public utilities of the area are doing all that they can to develop more power generation. I know of nothing at this time that they can do more than they are doing. The net result is that we are dependent to a very large degree on meeting this perilous situation, by the adequate financing of the Federal program that has already been started in the area.

What happened in the House, I don't know. Evidence was presented before the House committee, but they reduced the appropriations on about seven projects, appropriations that were recommended to them by the Army engineers and other Federal agencies. They reduced those, and all it adds up to is that they are deferring the

ultimate delivery of power generation to this starved-out area, as far as power generation is concerned.

Now, it does seem strange, because we know that that power generation means something to the whole country. We know of no other place where we can get that power generation at this time.

These projects that were reduced are all, with the exception of one, under construction at the present time, and it means a slowing up of that construction to the point where we don't get the power that they can produce a year or two years earlier as would be the case if the appropriations were made.

Chairman McKellar. Ice Harbor is the one that is not under construction; is that right?

Governor Langlie. No, sir; I am speaking of The Dalles.

Governor McKay. It has been started.

Governor Langlie. Is that under construction?

Governor McKay. Yes.

THE DALLES PROJECT, OREGON-WASHINGTON

Governor Langlie. The Dalles is the one I was referring to.

Senator Cain. The Dalles was granted $4,000,000 last year. That was another instance in which the Senate found it possible to restore an item which had not otherwise been appropriated.

Governor Langlie. The request for that dam this year, as I have it here, was in the amount of about $35,000,000, I believe.

Chairman McKellar. The request was for $37,500,000.

Governor Langlie. The request was entirely eliminated, which means that the whole development of that particular dam is just deferred a year. In a situation where we are facing such a perilous power shortage, putting off the delivery of power to a starved-out area another year is a very dangerous thing.

Now, frankly, that affects not only our Northwest area, but the whole country, because these projects are all self-liquidating.

Bonneville Power Administration is paying back, much faster than they anticipated, the money that was put into this program.

I can understand, of course, as a puplic official, the intense pressure these days for cutting down on public expenditures; but this, in my opinion, would be the poorest place in the world to undertake such a program, because it means less income for everybody in that area.

When we close down industries, when we curtail activities of all kinds, we put the area on a substandard basis economically that jeopardizes the well-being of the entire country.

So, we feel that on these projects where appropriations and construction has been undertaken, everything should be done to help the various Federal agencies building these programs, to speed up construction as much as possible. When these cuts are made and the agencies tell us that that is going to mean putting off the installation of two or three generators for here, there and the other place, and deferring the delivery of power to power centers in the Pacific Northwest, then we are just up against it.

We think it is very important that the Congress follow up with the appropriations as the need definitely appears.

There is no disagreement anywhere in the area in connection with the construction of these projects that have been started. We agree

uniformly that every dollar that can be spent there as possible be spent there.

Chairman McKellar. Are there any questions?

Senator Cordon. I have no questions, Mr. Chairman. I think the statement speaks for itself and is right to the point.

Senator Cain. The only observation I would like to make, sir, is that I suggested that the Governor of Washington would speak in positive fashion and say something constructive. He has done both.

Senator Cordon. Gentlemen, I want to express my appreciation to the Governor of Oregon for being here today and for presenting the views of his State before this committee. Oregon has always had outstanding Governors. He is one of our "outstandingest" Governors. I am happy to see him here.

Chairman McKellar. I think you had better stand up, after that.

STATEMENT OF HON. DOUGLAS McKAY, GOVERNOR OF THE STATE OF OREGON

THE DALLES DAM PROJECT, OREGON-WASH.

Governor McKay. After an introduction like that, I think I had better stand up.

Senator McKellar and members of the committee, I find myself in the position now where the subject has been pretty well covered. I do not want to bore you with repetition, but I would like to reemphasize some of the points that have been made.

First, I would like to file this statement.

Chairman McKellar. Without objection, the statement will be filed for the record.

(The statement referred to follows:)

INFORMATION IN SUPPORT OF CONTINUING IN 1953 FISCAL YEAR APPROPRIATIONS FOR THE CONSTRUCTION OF THE DALLES DAM

Power from The Dalles Dam as scheduled is essential if the State of Oregon and the Pacific Northwest is to continue its present growth and is to make its rightful contribution to the national economy.—One of the great resources of the Pacific Northwest and of the State of Oregon is its great potential supply of hydroelectric power. On the other hand Oregon and the Pacific Northwest have comparatively small resources of the natural fuels normally used for power production. The development of this great water resource for power so far has placed us in a position as a major contributor in the national defense effort; however, we have suffered and are continuing to suffer from a chronic power shortage which prevents the development of many industries which might otherwise have been established here. The present construction program of dams started sooner than The Dalles will increase our power supply, but as related by the expert analysis of the DEPA and the BPA, they will not eliminate our chronic power shortage unless the program of development of this resource is continued since the total potential load growth continues to exceed the scheduled supply. We need this power and we ask that its development not be interrupted.

Construction on this great project has actually begun and it cannot be stopped now and started again without a material financial loss to the Federal Government and to the local people in the vicinity of The Dalles.—To correct any wrong impression you may have received as to the status of this project I want to give you my personal testimony that this great project is actually under way. The contractor for the powerhouse excavation and cofferdam has moved onto the job with great quantities of heavy construction equipment and he has actually removed from the powerhouse area more than a quarter million cubic yards of rock. Hundreds of tons of the steel for the cofferdam has already been received and much more of it is en route from the mills. The district engineer at Portland informs me

that the preparation of contract plans and specifications for the various features of the project is proceeding as scheduled and there is no reason in the construction situation why the power cannot be on the line in 1957 as scheduled. If 1953 money for the continuation of this project is not appropriated the contractor must demobilize his personnel and equipment, the Government must discharge its highly trained personnel who are engaged in the preparation of contract plans and specifications with the result that the project cannot be later revived and completed without loss not only of time but of many millions of dollars to the taxpayers of the United States. In considering the losses involved in putting this project on a stop-and-go basis I feel you should also give some consideration to the losses to be imposed upon the people of The Dalles area. Although the estimates for this project included funds for construction of housing for the Government personnel, the district engineer felt that savings should be made in this field if possible; to cooperate with the Government the people of The Dalles have formed a community council with a view to providing for housing for Government personnel and for contract personnel in The Dalles area largely through private enterprise and at a minimum expense to the Federal Government. Their efforts have met with considerable success and a great deal of private capital has been invested in the development of housing, trailer courts, retail establishments, and other facilities. A stop-and-go project will cause these people to lose money which they have invested in an effort to assist this great project through private enterprise and local cooperation.

Withholding of funds for fiscal year 1953 appropriations for this project will not be in the best interest of the Indians nor of the conservation of the fishery resource of the Columbia River.—Before giving my views on this subject I would like to tell you that I have many Indian friends in Oregon and that I am very much interested in the welfare of all the Indians. We are very proud in Oregon that during the past year the Klamath Indians in southwestern Oregon and some 43 bands of the Grand Ronde-Siletz Tribes of Oregon coastal Indians have chosen to throw off their special status as wards of the Government and to undertake the full responsibilities of citizenship under the laws of Oregon as well as of the United States and that legislation is pending to permit such changes.

There has been a lot of misinformation on the Indian fishery, and on the negotiations to settle the claims arising out of construction of The Dalles Dam, which is detrimental to a sound program for continued construction of The Dalles Dam. I know that this committee wants to get at those facts and they are largely a matter of record which can readily be determined. However, I would like to point out a few of them.

The present annual worth of the Indian fishery which will be inundated by the Dalles Dam can be determined with reasonable accuracy from data now available. It is not a subject of wild speculation. The Oregon Fish Commission in its contribution No. 17, dated November 1951, and entitled "The Indian Dip-Net Fishery at Celilo Falls on the Columbia River" published the results of a survey and an on-the-spot count over a period of 4 years ending 1950. This was a cooperative study between the Oregon Fish Commission and the Washington Department of Fisheries. It was an independent survey; it was not financed by the Federal Government or controlled by the Federal Government. It concluded that: "A total amount of $23,000,000 would be necessary to compensate the Indians for the loss of the Celilo fishery." This was based upon a determination that the Indians at Celilo Falls catch an average of a little over 2,600,000 pounds of fish each year and the value of the catch was based on the then current 1951 prices. I am informed that this report, although not acceptable in every detail to all parties, has been considered a sound basis for negotiations by the Warm Springs, Umatilla, and Nez Perce Indians as well as the district engineer at Portland. The total annual poundage taken by the Indians may be further checked by taking the fish passage which goes upstream through Bonneville Dam toward the Celilo fishery and deducting the counts of fish taken by white fishermen, by the fish hatcheries, and those fish which pass over upstream dams or other counting stations above Celilo Falls. Since the fish are accurately counted at Bonneville and other places this method of computation would give a fairly accurate estimate of fish unaccounted for which are available to be taken by the Indians at Celilo Falls. The result checks closely with the estimate of the Oregon Fish Commission in contribution No. 17.

A second fact which you should know and which can easily be documented is that negotiations with the Indians for payments of the fair value of the damages to their fishery were promptly begun by the district engineer at Portland and are proceeding satisfactorily with the three tribes who are now willing to negotiate.

These negotiations are not just of interest to the Corps of Engineers but there are many citizens of Oregon with a lifelong interest in the welfare of these Indians who have been following closely the developments in the solution of these problems and who have been freely offering advice and assistance. The district engineer's first offer to negotiate with the Indians is in the form of a letter dated October 22, which is just 4 days after Congress completed its action on the 1951 appropriation bill which authorized first funds for the construction of the Dalles Dam. After extensive discussions with the Indians on their reservations and in Portland and with other citizens of the area, the Corps of Engineers arrived at certain principles which they believed would form the best basis of settlement and which were outlined to the tribes in a letter dated February 21, 1952. This letter asked that each of the affected tribes select negotiators empowered to proceed with detailed and concrete negotiations. The Nez Perce, the Umatillas, and the Warm Springs Indians did appoint such negotiators and did begin the detail negotiations in April. These negotiations resulted in the district engineer advising the Warm Springs and the Umatillas in May of the exact amount of his best estimate at that time of the value of their interest in the fishery. The figure was about 3½ million for each of the two tribes. These figures are generally in line with the per capita share of these tribes in the total value of the fishery as estimated by the Oregon Fish Commission. Although the tribes have not accepted this estimate and feel that there are modifications which should be made in it they indicated that they believed that it is an acceptable basis for discussion.

I should like to emphasize that these negotiations have not just been carried on between attorneys, but that the Indians themselves, Indians who speak English, have participated in virtually all of the negotiations. Although the Yakimas had participated in discussions beginning in October, they have not chosen to select Indians to negotiate in accordance with the request in the district engineer's letter of February 21, 1952, and have indicated that they did not intend to do so pending the outcome of their efforts in Congress to stop further appropriations for the construction of the Dalles Dam. Thus you can see that a failure to appropriate funds in fiscal year 1953 for continuation of this construction will not promote the completion of a settlement with the Indians, but will in fact, eliminate the possibility of reaching a settlement now with one of the principal tribes. Since the Celilo Falls area will not be drowned out by the pool of the Dalles Dam before 1957 and since only 1 or 2 percent of the Indian fishery is located in the area of actual construction of the dam, it is apparent that there is more than sufficient time for successful completion of all negotiations and payment of the claims prior to the time when the Indians suffer any important damage.

The elimination of the Indian fishery at Celilo Falls has an important conservation value to the fishery resource of the Columbia River which has never been sufficiently appreciated and emphasized. The Oregon Fish Commission points out that for the 7 years prior to 1935, the Indian landings of chinook salmon was only 2.4 percent of all chinooks landed in the Columbia River. Since 1935 the average yearly Indian dip net catch has jumped to 11.2 percent of all main river commercial landings. Based on the record of landings, about 40 percent of the fish passing Bonneville Dam are caught by white and Indian fishermen and the fish caught by the Indians at Celilo Falls amounts to about 90 percent of this catch. You will observe that the Indians take about 36 percent of all fish that pass Bonneville Dam. These are the brood fish that are going to the headwaters of the river to spawn. The average chinook female salmon will deposit approximately 4,000 eggs. It has been estimated by emminent biologists that, considering natural losses which occur in the streams and in the ocean, that for every fish that goes upstream to spawn three to four of the progeny will survive to become adults. This means that we could maintain the runs indefinitely and enhance the fishery resource. The expenditure of millions of dollars for fish facilities at Bonneville Dam and more millions at McNary Dam were predicated on adult fish getting through to spawning grounds. The taking of 36 percent of these fish by the Indians at Celilo Falls is contrary to this purpose and has been continued because of their long-established treaty rights and the lack of means for settling claims. However, from the point of view of conservation of the Columbia River fishery, it is indefensible and the elimination both of the Indian and white fishery above Bonneville Dam is highly desirable. Sound conservation practice always demands, preservation of the seed stock. The elimination of this Indian fishery which is to be paid for instant to the construction of the dam will be of great value to the conservation of the Columbia River fishery as a whole.

Lastly, I should like to point out that the settlement of the Indians' claims for the inundation of their Celilo Falls fishery will eliminate the need for their leaving

their homes and farms and forests to journey to the Celilo Falls area for the fishing season, which extends from March to November, and will give them funds with which to develop the resources and industries of their homeland area. All of the tribes claiming rights to the Celilo fishery have an enrollment of about 8,000. Of this total number it is estimated that about 850 participate actively in the Celilo Falls fishery. A large portion of these come for only a short time. A few derive a fabulous income from the taking of fish at the falls where their movement is restricted and they can be readily dipped out of the water. The great majority of the Indians derive their main source of livelihood from the lumber, the farms, and business enterprises. With the funds to be derived from the settlement of the Indian claims, tribes will be in a better position to develop their holdings so as to provide more stable occupation and income for the group as a whole. Some of the Indians will desire to continue fishing as their vocation and ample opportunity will be afforded them to fish on the lower river similar to white fishermen in accordance with State laws. It is my belief that therein lies the true interest of the Indians and the best prospects for their developing the means for achieving a complete integration with the responsibilities, privileges, and obligations of all other American citizens.

CORPS OF ENGINEERS, UNITED STATES ARMY,
OFFICE OF THE DISTRICT ENGINEER,
PORTLAND, OREG., DISTRICT,
Portland, Oreg., October 22, 1951.

CHAIRMAN, UMATILLA INDIAN COUNCIL,
Pendleton, Oreg.

CHIEF TOMMY THOMPSON, WYAMS INDIAN TRIBE,
Celilo Falls, Oreg.

CHAIRMAN, YAKIMA INDIAN COUNCIL,
Toppenish, Wash.

CHAIRMAN, NEZ PERCE INDIAN COUNCIL,
Fort Lapwai, Idaho.

CHAIRMAN, WARM SPRINGS INDIAN COUNCIL,
Madras, Oreg.

(Through: Area Director, Bureau of Indian Affairs, Swan Island, Portland, Oreg.)

GENTLEMEN: The Chief of Engineers, Corps of Engineers, United States Army, has advised this office that the Congress has passed the civil function bill for 1951, appropriating $4,000,000 as the first funds for the construction of the Dalles Dam, Columbia River, Wash. and Oreg. Construction of this dam was authorized by the United States Congress, under Public Law 516, Eighty-first Congress, second session, approved May 17, 1950. The authorizing law specifically provides, among other things, that "projects authorized herein shall be initiated as expeditiously and prosecuted as vigorously as may be consistent with budgetary requirements." With this authority and funds now available, my present intention is to initiate construction on this important power and navigation dam at the earliest possible date, and I fully expect that the first construction work will be started in April of next year. It will consist principally of rock excavation on the Washington side of the dam site just below Big Eddy. The plan is to complete the installation of the first power units in November 1957, and the lake behind the dam will be created by blocking the river by January 1956. Normal river functions will prevail until that time.

This office recognizes that the dam construction will in time submerge the traditional Indian fishing grounds at Celilo Falls with attendant loss to Indian tribes and individuals. This office is further aware of the obligations on the part of the Federal Government arising out of treaties with the various Indian tribes, and declares its intentions to negotiate with the affected Indians in the spirit of good faith to make them whole for actual losses suffered. Negotiations will be initiated and extended on the basis that considerations to the Indians will be founded on factors which will lead to a fair settlement with the Indians.

In accomplishing these negotiations I intend to give the matter my personal attention to a very large extent and have assigned my special assistant, Mr. Percy M. Othus, to head up the negotiations and devote his entire time on this very important problem. In addition, we expect to add to our staff, a man with long and distinguished experience and broad knowledge in dealing with Indian problems

This man will be of the caliber, training and integrity similar to that of a superintendent of an Indian reservation. We will have the help and cooperation of the United States Indian service, the United States Fish and Wildlife Service and other interested Federal agencies as well as the fish commissions of both Oregon and Washington.

This office is presently gathering necessary information and expects, as time goes on, to be in touch with the various interested Indian officials and their representatives. We expect, with the cooperation of the northwest director of Indian affairs, to arrange a general meeting in the not too distant future. In the meantime, I want to assure your honorable council and all other individuals of the tribe, of my desire and intention to bringing the negotiations to a mutually satisfactory conclusion as soon as can be intelligently done.

Very truly yours,

T. H. LIPSCOMB,
Colonel, Corps of Engineers, District Engineer.

CORPS OF ENGINEERS, UNITED STATES ARMY,
OFFICE OF THE DISTRICT ENGINEER,
PORTLAND, OREG., DISTRICT,
Portland 5, Oreg., February 21, 1952.

CHAIRMAN, NEZ PERCE INDIAN COUNCIL,
Fort Lapwai, Idaho.

CHAIRMAN, UMATILLA INDIAN COUNCIL,
Pendleton, Oreg.

CHAIRMAN, YAKIMA INDIAN COUNCIL,
Toppenish, Wash.

CHAIRMAN, WARM SPRINGS INDIAN COUNCIL,
Madras, Oreg.

GENTLEMEN: Reference is made to my letter of October 22, 1951, wherein this office advised of its intention to proceed with the construction of the Dalles Dam and indicated a recognition of foreseeable losses to Indian tribes and individuals which will result therefrom. This office also declared its intention to negotiate promptly with the affected Indians to compensate them for losses or damages they would suffer.

Since writing this letter considerable study has been given to the proper approach to an equitable settlement, and conferences were held with tribal officials, the Indian Service, United States Fish and Wildlife Service, and others interested in these studies and discussions. Consideration has been given to many suggested means of settlement.

From these studies and consultations this office concludes that the best approach is now to negotiate separate agreements with each tribe entitled to compensation for fishery losses which will occur when their usual and accustomed fishing places are unundated, probably in 1957, as a result of the construction of the Dalles Dam. To this end we expect to start negotiations in the early future. We desire to limit our negotiations solely to damages which will arise from the construction of the Dalles Dam and to making payments agreed upon from money appropriated for construction of the dam. It is believed that arrangements can be made for paying the entire agreed sum during the construction period and prior to the time that the fishing sites within the reservoir area will be inundated. It is anticipated that in consideration of the payments to be made to a tribe, it will relinquish all further claims against the Federal Government for damages arising out of the infringement of the rights of the tribe through custom and usage or under the treaty of 1855, due to inundation of the usual and accustomed tribal fishing places by the waters of the Columbia River backed up by the Dalles Dam.

Since the treaties of 1855 are agreements with certain tribes rather than with individuals, it is intended to confine the proposed agreement to matters affecting the rights of the tribe as a whole. Any taking of individual real-estate holdings and real property will be handled with the individual Indian owners the same as in any other real-estate transaction, reserving to the individual owner any fishing rights held as a member of the tribe. It is recognized that a number of the Indian tribes have claims pending before the Indian Claims Commission and perhaps other agencies for alleged infringement of their treaty rights arising out of reduction of the Columbia River fishery resource due to construction of dams, river pollution, and perhaps other causes. The negotiation of settlements of such

claims is not within the authority of this office, and we will not attempt to recognize any such basis for compensation in these negotiations.

We hope to begin active negotiations in the next month or two with each of the tribes which believes it will be entitled to damages under its tribal treaty rights due to the inundation of usual and accustomed fishing places by construction of the Dalles Dam. To accomplish the first phase of the negotiations, it is requested that an authorized committee of two or three members be appointed to represent the tribe and that their names be furnished to this office within the next 2 weeks. This committee should be prepared to meet with my special assistant, Mr. Percy M. Othus, in his office within the next 2 months at which time they should be prepared to discuss the legal and equitable grounds upon which the tribe relies in claiming a compensable interest in the fishery. They should also be prepared to discuss poundage, and other factors to be used as a reasonable basis for determining the value of the tribal fishery.

You are requested to advise your preference as to the most convenient week which should be set aside for this discussion.

Very truly yours,

T. H. LIPSCOMB,
Colonel, Corps of Engineers, District Engineer.

THE INDIAN DIP NET FISHERY AT CELILO FALLS ON THE COLUMBIA RIVER [1]

R. W. Schoning,[2] and T. R. Merrell, Jr., and D. R. Johnson [3]

INTRODUCTION

Untold centuries ago some wandering Indian—or his aboriginal predecessor—discovered that he could catch salmon at the falls in the Columbia River a few miles below the mouth of the Deschutes River. Virtually nothing is known about the beginnings of the fishery that developed. Shrouded by the ages that have passed, a flourishing fishery evolved. An extensive commerce with neighboring tribes developed, and this fishery was noted by the early explorers, who visited that portion of the Columbia River.

Craig and Hacker (1940) have summarized some of the early observations and mention the explorations of Lewis and Clark, David Thompson, Suckley and Cooper, and Charles Wilkes. Indians were found fishing in many parts of the Columbia River watershed, but they were particularly numerous at Celilo Falls. Craig and Hacker estimate that the annual take of salmon throughout the Columbia River watershed by Indians in the early 1800's was about 18,000,000 pounds. While this take was not restricted to the Celilo Falls area and the estimate is not precise, its enormous size indicates the magnitude of the Indian fishery.

Some of the observations of the explorers are of considerable interest. When Lewis and Clark journeyed down the Columbia Captain Clark wrote, concerning his Celilo observations of October 22, 1805, "* * * the waters is divided into several narrow channels which pass through a hard black rock forming islands of rocks at this stage of water, on those islands of rock as well as at and about their lodges I observe great numbers of stacks of pounded salmon neetly preserved * * * thus preserved those fish may be kept sound and sweet several years' as those people inform me, great quantities as they inform us are sold to the white people who visit the mouth of this river as well as to the nativs below." [4]

Several distinct tribes speaking different languages inhabited the Celilo area and caught large quantities of salmon for their own consumption and for trading. In addition to resident Indians, many others traveled to the Celilo area to fish during the summer and fall.

When the treaties of peace with the Indians were negotiated in 1855, their rights to fish in the usual fishing places were included, and by interpretation their fishing has been virtually unrestricted. The only restriction placed upon the Indians has been the stipulation that they cannot sell fish caught during seasons closed

[1] This is the first of a series of reports of cooperative studies by the Washington Department of Fisheries and the Oregon Fish Commission.

[2] This paper was completed while the senior author, R. W. Schoning, was in the armed services.

[3] D. R. Johnson was employed by the Oregon Fish Commission during the course of this study; he is now fisheries research supervisor, Washington State Department of Fisheries.

[4] P. 148, vol. 3, Original Journals of the Lewis and Clark Expedition, Dodd, Mead & Co., 1905, New York.

to commercial fishing, though they can catch fish for their own use. Article III of the treaty [8] stated:

"The exclusive right of taking fish in all the streams, where running through or bordering said reservation, is further secured to said confederated tribes and bands of Indians, as also the right of taking fish at all usual and accustomed places; in common with citizens of the territory, and of erecting temporary buildings for curing them; together with the privilege of hunting, gathering roots and berries, and pasturing their horses and cattle upon open unclaimed land."

The number of Indians fishing has increased steadily in recent years, some of them coming from as far away as Montana and California. This influx of Indians who had not originally fished on the grounds results in some friction between the newcomers and the original tribes.

Since white men first established colonies on the North American Continent some 350 years ago, enormous changes have taken place. Animal life has changed, forests have been removed, soils have washed away—even the rivers have changed. The once flourishing Atlantic salmon runs have largely disappeared, the carrier pigeon is gone, and buffalo have disappeared from the plains. On the Pacific coast the Indians are absent from many of their former haunts, even in Canada and Alaska. It is both surprising and interesting, then, that an enormous Indian fishery still exists at Celilo Falls. There are other large Indian fisheries in Washington, British Columbia and Alaska, but perhaps nowhere on the North American Continent is there a native fishery as concentrated and as large within a limited area as the one at Celilo Falls on the Columbia River.

Salmon are scarce at Celilo during the winter, and there is very little fishing at that time. Beginning in March and April the first run of salmon—the highly prized spring Chinook—begins to arrive. In late April or May this run migrates through the Celilo area in greatest numbers, just before the annual spring freshet on the Columbia River reaches its peak. As the Columbia begins to drop the blueback salmon run appears in numbers and this run peaks in early July. Chinook salmon continue to be present during the entire summer and become very abundant in early September at which time they are called fall-run or fall Chinook. Other important species are present in the late summer and fall. As the blueback run passes, up-river steelhead trout mount in abundance and are present in significant numbers from July to October. A relatively small run of silver salmon passes Celilo Falls in early September on its way to up-river spawning grounds. To summarize, from November to April few migratory fish are present; spring Chinook are abundant in late April and May; spring chinook and blue backsalmon in June; Chinook, blueback and steelhead in July; chinook and steelhead in August; Chinook steelhead, and silver salmon in September; and a few chinook and steelhead in October.

The Celilo Falls Indian fishery justly deserves considerable study. Its unique character—a vast assemblage of Indians from various tribes fishing with gear much like that used in ancient times—and its accessibility to commercial interests and tourists alike make it a situation of financial importance. Furthermore, the very size of the present-day take of salmon at Celilo—as will be shown in this article—makes the unrestricted Indian fishery, in this day of drastic restriction for conservation purposes, a controversial subject. Finally The Dalles Dam has recently been authorized by Congress. Since this proposed dam for which moneys have been appropriated, will be only a few miles below Celilo Falls, it will completely inundate the Falls and obliterate the Indian fishing sites. For these several reasons attention has been focused on the Celilo fishery recently, and the need for gathering and assembling all possible information has become evident.

Investigation of the Celilo Indian fishery has involved two phases. Firstly, since fishing customs in general and the subsistence take during certain closed commercial seasons was almost entirely unknown, a field study of the fishery was inaugurated beginning in August, 1947. Secondly, a gross analysis of the commercial landings, including the percentage of the Columbia River catch taken in the Celilo area was undertaken. Along with the latter study, consideration of the relative importance of the Indian take compared with the entire commercial catch above Bonneville Dam is included.

Every year a large influx of Indians arrives at Celilo from the various Indian reservations to fish the big fall run. A closed commercial fishing season, beginning noon August 26 and ending noon September 10, has protected the fall migration

[8] From an opinion of the Supreme Court of the United States, No. 318, October term, 1941. Decision of Court in *Case of Sampson Tulee*, Appellant, v. *State of Washington*, March 30, 1942.

of chinook salmon since 1890. However, the Indians are allowed to fish during the entire year. Figure 2 shows the daily landings of fall chinook by the Indians for 1947, 1948, and 1949 for the period August 20 to October 7. It includes both commercial and closed season landings. It can be seen that the catch begins to peak in early September during the closed period and reaches its height a few days after the season opens. Since commercial fishermen below Celilo cannot fish during the 2-week period when the peak of the fall chinook run is migrating upriver, a significant percentage of the fall run is allowed to pass upriver unmolested until it reaches Celilo Falls.

Since 1943 there has also been a spring closed season designed to protect the valuable but declining spring chinook runs and blueback runs. The Indian subsistence fishery has been the only river fishery operating on the runs during these periods.

Catches during these closed seasons have never appeared in any offlcial catch records, and the impact of this catch upon the chinook runs has been virtually unknown. It was primarily to ascertain the magnitude of the closed season catch that the present study was undertaken. Fall chinook during the fall closed season are caught in far greater numbers and by far greater numbers of fishermen at Celilo Falls than are spring chinook during the spring closed period. The reason for this is that only a limited number of fishing locations are available at the falls in the spring, and the spring run is smaller than that occurring in the fall.

Customs of fishery

The ruling body for the fishery is an Indian group composed of three representatives from each reservation contributing fishermen. Disputes concerning fishing rights and other fishery rulings are settled by this group. Minor intratribal differences are referred to the tribal fish committees.

Problems often arise over ownership of certain locations and blood right to fishing privileges, one-quarter Indian blood being required to fish on the Indian grounds.

Fishing locations are a family inheritance and are passed down from father to son. During the closed season, one man commonly comes to the grounds and catches all he wants for his own use before another begins fishing. Each fisherman usually catches only what his family can clean and prepare that night. On other occasions, a family drives over from the reservation, gets its year's requirement, and leaves the next day. As many as 10 or 12 different persons may fish at one location throughout a day. If the owner or some member of his family is not fishing, however, another person may fish with the owner's permission.

It is an old custom of the Celilo Indians to refrain from fishing at night in order to allow any fish that move during the hours of darkness to escape to the spawning grounds. Increasing numbers of Indians from the various reservations have been journeying to Celilo Falls to fish in recent years, and the policy is no longer strictly observed. During the commercial season, many of them fish all night; however, little night fishing is done during the closed period because personal fish requirements can be met by merely fishing in the daytime. A few of the fishermen who sell their fish during the closed season do fish at night, however. As a general rule, fish migrations are at a minimum during darkness, so only a few are caught at that time. Catches generally improve when fish begin to move at three or four o'clock in the morning.

It is compulsory for all fishermen to be roped to the platform while fishing. One end of the rope is tied to the platform, and the other has a slip knot which is worn around the waist. Occasionally an Indian is jerked off his scaffold, but the rope saves him from a swim and possible drowning. Indians occasionally lose their nets when two or three large chinook enter the net simultaneously.

Geography of the grounds

The Indians fish during both the spring and fall salmon runs. The river is too high to fish at Celilo Falls proper during the spring run, so the bulk of the spring fishing is done from platforms on the rocks near Tenino at the lower end of the Dalles-Celilo Canal in Oregon and on the opposite side of the river in the vicinity of Spearfish, Wash. The locations from which the Indians fish in the fall are under several feet of water during the spring, but later in the season as the water level lowers and the fall run appears in the river the fishermen move upriver to the main Celilo Falls fishing grounds. The best fishing sites extend for approximately a mile down the river, beginning near the upper end of the canal and extending downstream to the railroad bridge. There are only a few good fishing locations near Tenino because of the rock formations and resulting action of the river. As the water lowers throughout the summer, the fishing locations

at the main grounds become progressively better for the dip net fishery. Consequently the total catch of the fall fish by the increased number of fishermen is much greater than the landings of spring fish.

At the principal fall fishing area at Celilo Falls proper, fishing is done from wooden scaffolds situated on four small islands, three large ones, and a section of the shore (fig. 3). Scaffolds of various sizes and shapes are constructed along the water's edge on the islands as well as the shore. Some fishing is done from the rocks themselves, although it is usually not as satisfactory as when using a platform. The scaffolds enable the fishermen to dip their nets in the deeper sections of the channels where more fish are found.

The majority of the fishing effort is concentrated near the upper end of the Dalles-Celilo Canal, principally on the islands. Platforms are also located at intervals along the shore down to the railroad bridge; the bulk of the shore nets are put in only after the reopening of the commercial season on September 10.

Near the railroad bridge there is one large channel up the Oregon side of the river, and a considerable number of smaller ones up the Washington side. Fishing under the bridge is done only on the smaller channels. Above the bridge, but just below the main fishing grounds, the large channel forks. The south channel leads to a cul-de-sac formed by an impassable falls with a very small passable artificial channel which was built for the operation of a fishwheel. The north channel leads to a large, rolling, turbulent falls which is passable in places to the fish and is not an abrupt drop like the one on the south channel.

Fishing is very heavy on the south channel in the cul-de-sac below the falls and in the small channel leading from it and, likewise, on half of the north channel. Many of the smaller channels under the bridge are not fished at all due to their inaccessibility and as a result, many salmon presumably escape to the spawning grounds by ascending them. Apparently very few escape the dip nets below the impassable falls, as the only route by which fish can move upstream is through the small artificial channel which has a heavy concentration of nets. Thousands ascend the large rolling falls.

Fishing equipment

Small cable cars link the shore to the various islands and between some of the islands to permit rapid and easy travel to and from the fishing grounds (fig. 4). The number of cable cars in operation varies from year to year; in 1947 during the fall closed season there were five to the mainland and in 1950 there were eight. Most of these cable cars are erected by fish buyers who operate them for the convenience of the fishermen. During the open season, the buyers have scales and fish boxes ready at the terminus of the cable, hoping that the fishermen whom they transport will sell fish to them. However, anyone is free to ride the cables and fishermen are under no compulsion to sell fish to anyone. During the closed season, fish buyers continue to operate the cable cars even though they cannot buy fish.

Some of the cable cars are motor-driven and some are hand-propelled. The motor-driven ones are most popular because they involve no work on the part of passengers, but they only operate during the daytime. The hand-pulled cars can be operated from either terminus of the cable or by the passengers riding in the car.

One of the understood rules of the fishing grounds requires that a fisherman waiting to ride a hand-cable car must help pull across anyone en route, and a person who is pulled across must in turn pull the cable car on its return trip.

The design of these cable cars is simple. Essentially they consist of a wooden box about 3 feet by 5 feet by 1 foot which is suspended from a taut cable on two pulley wheels. An endless rope or cable is attached to each end of the box, and runs over a pulley at each shore terminus. The car is moved either by pulling the rope attached to the car by hand or by a gasoline motor. The cars hold four fishermen or the equivalent amount of fish and men. Occasionally an overloaded car will cause the cable to sag to such an extent that it is inundated part way across the river.

The universal method of transporting fish from the fishing grounds is in burlap sacks. These sacks will hold about as much as a man can carry, and are the easiest method of carrying fish over the rocks and on the cable cars.

The nets used by the Indians are of two general types. Although they are both dip nets, one is held stationary while the other is moved through the water. The motionless one is referred to as a set dip net in this report, while the other is called a movable dip net, or simply a dip net.

The latter type is attached to a pole about 2 inches in diameter varying in length from 15 to 25 feet, depending on where it is used. It is fished only in a fast

current where the water is aerated to such a degree that the visibility of the fish is very limited. The steel hoop is an oval about 30 inches long and 18 inches wide. The mesh varies from 2½ to 5 inches, stretch mesh, according to the desires of the fisherman. It is attached to the hoop by small brass rings and secured by a leather thong which is held in place by slipping it under a taut twine at the base of the pole (fig. 5). The net is dipped into the water and the current aids the fisherman in forcing it downstream through the roily water. Other factors being equal, the size of the catch is directly proportional to the speed with which the net passes through the water. The more rapidly the net moves, the less chance the fish has of escaping.

While most of the movable dip nets are fished blind, i. e., the fisherman cannot actually see the fish he is trying to catch, there is one area at Celilo where "roping" is practiced (fig. 6). During certain water levels, the river flows over slanting smooth rocks at a depth of about 1 to 2 feet. When fish swim up over these rocks, they can be seen from the platforms constructed over them. Dippers on their platforms wait tensely for a fish to appear, their nets held in readiness. When one is seen swimming up, the net is dipped through the water, intercepting the fish. Since only a limited area is suitable for this type of fishing, and it is dependent on exact water flows, the method is used to only a minor extent.

Small wire basket traps constructed of chicken wire are also used in some locations, but only occasionally. These are set in white water with the opening upstream at a location where fish tend to fall back, and are pulled up when a fish enters.

Many of the fishermen who use a movable dip net have a pie tin or similar object fastened to the pole near the lower end. When the net is in the water, the force of the water against the tin plate causes the net to move through the water more rapidly (fig. 7). Occasionally an Indian will construct a more elaborate device to increase the speed of the net through the water. One such device consists of a galvanized rectangular bucket about 2 by 1 by 1 foot deep which is attached to the net hoop by two ropes about 10 feet long. The bucket is suspended from overhead rocks by a system of ropes and pulleys controlled by a second man, so that the bucket enters the water at the same time as the net and pulls the net through the water with great speed.

With the movable type of dip net, fish moving upstream are usually captured by entering the net head first. When a fish strikes the net, the thong pulls free and the net purses around the fish preventing its escape. The pole is pulled in hand over hand and lifted to the platform on which the fisherman is standing, which is usually 3 or 4 feet above the surface of the water. A helper often aids the fisherman in pulling up his dip net and in dispatching the fish. The fish is struck on the head with a wooden club while still in the net, quickly removed, and put into a box on the platform. During the height of the run, two or three fish are sometimes caught in one dip. In one instance in 1946, eight fish were caught in one dip. In another instance 212 pounds of fish were landed from one dip. Such occurrences are rare, however. Large chinook sometimes escape by breaking through the net, even though the twine is as much as 18-thread heavy twine. Fourteen- and sixteen-thread twine is more commonly used for the nets. Before manufactured net twine became available in the nineteenth century, the nets were made of grass which was obtained through trading. The net bags are all made by the Indians, the time for constructing them varying between 3 and 4 hours, depending on the speed of the net maker.

The set dip net is attached to a more sturdy pole, usually 3 or 4 inches in diameter and varying in length from 10 to 20 feet depending on the fishing location The steel hoop varies from 2 to 5 feet in diameter (fig. 8). The mesh is fastened to the hoop by small metal rings, but there is no thong for purse action as with the movable dip nets. The net itself is much deeper than the movable dip type; it may be as much as 5 feet deep while the movable dip net has a bag of only about 3 feet. The frame of the net is supported in the water by wires connected to the shore or to the platform. Fish are usually caught in this type of net when they are falling back from a falls or a strong current. Occasionally a set net is fished in an eddy to catch fish which are resting there. A trigger string is attached to the extremity of the bag. When a fish strikes the net, the vibration is telegraphed by the string to the fisherman holding the end of the string, and he quickly pulls up the net.

While no systematic counts of nets in operation were made in the 4-year study, an indication of their numbers can be had from counts on 2 days.

On September 17, 1947, near the peak of fall run, there were 119 movable and 93 set dip nets in operation with an average of three or four Indians per net

per day. On September 23, 1948, there were 93 movable and 79 set dip nets in operation, excluding those in the vicinity of the railroad bridge. If these were included, the 1948 count would approximate that of 1947. In both cases these counts do not necessarily indicate the peak number of nets fishing at Celilo.

ANALYSIS OF CLOSED SEASON CATCH

Closed-season landings

The estimation of the magnitude of the Indian closed-season catches of fish has been the most important and difficult objective in the Celilo field studies. With each succeeding year since 1947, slight changes in methods of gathering data and methods of analysis have been made. The greatest and most consistent effort has been applied to the fall closed season.

Spring closed season

Only a limited number of fishing locations are available at the time of the spring closed season, and a relatively small number of Indians fish. Because of the small numbers of fish involved, only a limited effort has been applied to estimation of the spring closed-season catches. In 1947 and 1948, very few observations were made, so that no estimates of the closed-season catches were made for these years.

In 1949 and 1950 a combination of periodic actual counts of fish, estimates, and interviews with fishermen were used to determine the closed-season catch. The time and length of the spring closed season varies considerably from year to year. In 1949 it was closed from June 23 to July 14, while in 1950, it was closed from June 7 to July 6.

The magnitude of the spring closed-season catch is greatly dependent on the water stage of the Columbia River. Fishing is carried on in three general locations: Spearfish, along a 2-mile stretch of the Washington shore; Tenino, opposite Spearfish on the Oregon shore; and at Celilo Falls proper, 8 miles up the river from the Spearfish-Tenino grounds.

Landings in the Celilo area are usually slight at the beginning of the closed season and become progressively larger as the river drops and more locations suitable for construction of scaffolds become available. Conversely, fishing is best in the Spearfish-Tenino area at the beginning of the closed season and becomes worse as the river recedes leaving suitable scaffold locations high and dry. An indication of the rapidity with which conditions change can be seen from counts of scaffords, nonoperative and operative, made during the 1948 spring closed season. At Tenino on June 28, 1948, there were a total of 59 scaffords, 28 of which could be operated; on July 8, only 12 scaffolds were in operation. At Spearfish on June 27, 1949, 69 scaffolds were counted, 31 of which were operative. On July 12, only 12 scaffords out of a total of 60 were operative. At Celilo, on June 28, 1949, seven scaffords were counted, two of which were in operation. On July 12, with the river steadily dropping, 18 out of 22 scaffords were in operation.

During almost the entire 1950 spring closed period fishing conditions were poor, due to an abnormally prolonged freshet on the Columbia River. Consequently, catches were much less than in 1949 and at times almost no fishing was in progress. Celilo Falls proper was under water during the entire spring closure, so all fishing was done at Spearfish and Tenino.

Blueback salmon and chinook salmon are caught in greatest numbers during the spring closed season, though smaller amounts of steelhead and sturgeon are also caught. Table 1 summarizes the total catch during the spring season in 1949 and 1950.

Fishing during the spring closed season is largely done with small-meshed movable dip nets, designed to take blueback which are usually most abundant at this time. A few large-meshed, heavy twined set dip nets are also used, primarily for catching sturgeon.

Most fish caught during the spring closed season are consumed fresh by the Indians or canned or frozen, in contrast to the fall when most of the closed-season catch is dried. Each Indian attempts to catch 15 or 20 fish a day in the spring, which is sufficient to keep a woman busy during the day. Most of the spring closed-season fishermen are residents in the vicinity, since the more distant reservation Indians largely depend upon the fall run to supply their yearly needs.

Fall closed season

In 1947–48 one man, occasionally augmented with one or two helpers, was stationed at the falls throughout the fall closed season. In 1949–50 two or three

men were present. Augmented by reliable local help this small crew was able to check the fishery with considerable care, and the catch estimates and other data obtained proved highly useful (tables 10–14).

For the purpose of assessing the catch, the Celilo Falls region was divided into four main areas which were treated separately due to differences in geography and catch composition.These areas were the railroad bridge area; the Lower Cables at Tumwater; the Upper Cables (including Albert's Island, Standing Island, Papoose Island, Chief Island, and Chinook Rock); and Oregon Shore (fig. 3). In most cases fish were counted only as they were carried away from the fishing grounds.

The sacks of fish being transported from the fishing grounds were individually opened and their contents examined. However, there were instances when it was impossible to open a few sacks. In these cases the appearance of the sack, the origin of the catch in the fishing area, and the general abundance of various species at that time was known and it was possible to estimate the contents with considerable accuracy. Such estimates were checked periodically and found to be reliable.

Each day was broken down into half-hour intervals, the landings in each area being tabulated by this time period. These landings by half-hour periods do not necessarily represent the catch for the respective preceding interval (except in the case of Oregon Shore, 1950). It is common practice for a fisherman to fish during the early morning and to bring his morning's catch ashore at noon when he goes home for lunch. The afternoon's catch is often left until 5 p. m. or later before taking it home. Other Indians after fishing for 2 or 3 hours will take their catch home immediately to keep their wives busy preparing fish throughout the day. Very few if any landings are made before noon on September 10, all of the fish caught during the night and until noon on the 10th being saved until it is legal to sell the fish.

Landings are least during the early part of the closed season in the fall and increase gradually, reaching a maximum at the end of the season (figs. 9 and 10). There are two reasons for this steady increase: the fall chinook run is approaching its peak, and fishing intensity increases as a result. Steelhead do not show as great an increase as chinooks because there are not as many fish available, although fishing intensity on both species remains the same.

Upper Cables

For various reasons the catch landed in each area during certain half-hour intervals was not obtained. Landings made during times when a counter was absent were estimated on the basis of the known percentage landings for like time periods of other day's observations.

Lower Cables

Counts of fish landed at Lower Cables (Tumwater) were obtained by two methods. In 1947, Mr. Chris Kito, an employee of the Seufert Bros.' Cannery and operator of the cable car at Tumwater, estimated the number of pounds of fish of each species brought across at that location. Mr. Kito's information is reliable, and his observations are as accurate as any which could be made.

In order to convert his 1947 estimates to numbers of fish it was necessary to have an average weight per fish and a percentage composition by species of the catch. The former was obtained by weighing 308 chinook and 180 steelhead selected at random over a period of several days from different parts of the main fishing area. The chinook averaged 20.1 pounds and the steelhead 9 pounds. While it is unfortunate that a larger sample was not weighed, the weights agree closely with others obtained under slightly different circumstances (table 5).

In the succeeding 3 years, Mr. Kito counted all of the fish brought across at Lower Cables by day, so these figures were used directly.

Oregon Shore

Fish caught in the Oregon Shore area were counted as they were taken from the fishing area in 1947–49. This is the only area accessible to tourists, and individual fish are constantly being sold and transported from the grounds, making it difficult to tally the catch.

In 1950 with additional manpower available it was simpler to count the fish as they were caught. All of the fishing platforms were in a limited area and were visible to the checker at one time. While identification of the several species had to be done at a distance, several checks of the accuracy of the observers

demonstrated that they were accurately recognizing chinooks, silvers, and steelhead.

Bridge area

The railroad bridge forms the lower limit of dip-net fishing at Celilo Falls. The magnitude of the catch in this area is relatively small compared to that at Upper Cables, and methods of estimating this catch varied from year to year.

In 1947–48, interviews with fishermen in the area and spot checks were relied upon to determine the catch in the bridge area. Inasmuch as only a comparatively small number of Indians fish near the bridge, they have a good idea about the total number of fish landed in that area.

In 1949, more frequent visits by a checker were made to the bridge area, generally at least one being made each day. Fish which had been caught were counted each time and the Indians were also questioned concerning their catches.

In 1950 the most complete bridge area counts were made, and most of the catch was actually seen by observers.

The percentage of total Celilo fall closed-season landings which was actually counted during the 4 years ranged from 84.8 percent to 95.7 percent (table 2). The proportion estimated varied considerably between the various areas. In general, however, an effort was made to actually count as many fish as possible in the areas of greatest landings. Thus, smaller percentages were estimated at the places of greatest landings such as Upper Cables, and greater proportions had to be estimated where relatively few fish were landed, such as in the bridge area.

TABLE 2.—*Summary of fish counted and estimated during fall closed season, 1947–50*

Year	Total fish counted	Total fish estimated	Total combined	Percentage of total fish estimated
1947	23,494	4,207	27,701	15.2
1948	22,466	2,575	25,041	10.3
1949	28,602	1,271	29,873	4.3
1950	28,957	2,759	31,716	8.7

The total estimated Indian fall closed-season catch by species during the 4-year study is shown in table 3. Silver salmon fluctuated more widely than any of the other species. The big 1947 cycle reappeared in 1950, and was reflected in substantial landings in these 2 years. The landings of silvers in 1948–49 were insignificant, however.

The "jacks" (precociously developed small salmon) which were counted in 1947–49 were added to the chinook total, as they were identified as chinook jacks. The silver jacks were simply counted as silvers at the time of observation. In 1950, however, when the largest number of silvers was counted, jacks, chinook or silver, were not differentiated. To assign the jacks to the total chinooks and silvers counted, the ratio between the large chinooks and large silvers counted was used. The 1950 jacks were computed as being 84.9 percent chinooks and 15.1 percent silvers.

TABLE 3.—*Total Indian fall closed-season landings, by species, at Celilo Falls in numbers of fish, 1947–50*

[Figures rounded to nearest hundred]

Year	Chinook	Steelhead	Silvers
1947	21,600	5,000	1,200
1948	17,100	7,900	100
1949	23,300	6,500	100
1950	21,000	6,900	3,800

Tourist sales

Management of the Columbia River fishery by the States of Oregon and Washington requires, among other things, that the catch be adequately assessed. Normal commercial sales are routinely recorded, and problems arise only when significant takes are unrecorded. It has already been pointed out that the

Indian subsistence take during closed seasons, particularly that during the big fall run, was checked primarily for this reason. There are additional fish taken during open seasons that are retained by the Indians for their own use, and a number are sold illegally direct to tourists each year. No data were gathered relative to the fish kept by Indians for their own consumption during open seasons, but it was possible to obtain some idea of the magnitude of tourist sales.

The magnitude of sales of Indian dip net caught fish sold to tourists is, however, very difficult to determine. Availability of fish for direct sales has become common knowledge, and in many cases a person representing a number of his neighbors drives a truck to the fishing grounds and buys enough fish for all of them.

About 25 fishing platforms are accessible to tourists in the Oregon shore area and on Chinook Rock. Fishermen at these locations have small hand scales on which they weigh fish as they are sold to customers (fig. 11). The end of the Pendleton round-up sometimes coincides with the peak of the fall run, resulting in a land-office business for the Indians as the round-up spectators return to their homes in western Oregon via Celilo. Some visitors stop at the fishing grounds daily but are in greatest numbers on week ends and holidays. During the commercial season, almost the entire catch by fishermen of the Oregon shore area is purchased by tourists at 25 to 35 cents per pound. In 1947 counts of these sales were made frequently during the season. On the peak day over 400 fish were sold including silvers, steelhead, and chinooks, the latter being in the majority. The estimates and actual counts of tourist sales in 1947 during the open season combine to form a total of approximately 3,000 chinooks, 1,000 steelhead, 100 chinook jacks, and 100 silvers. Converting to pounds of fish shows 60,000 pounds of chinook, 9,000 pounds of steelhead, and 800 pounds of silvers.

It can be seen that the total amount of illegal tourist sales during the open season although large is relatively insignificant when compared to the amount sold through regular commercial channels. Since the tourist sales were roughly determined in 1947 and since their magnitude was sufficiently small as to have but little effect on the over-all management of the fishery, it was deemed inadvisable to make a detailed survey of these sales in 1948, 1949, and 1950, though rough estimates were made for the latter 3 years. Total estimates of tourist sales are shown in table 4.

TABLE 4.—*Estimates of fish sold to tourists, in numbers of fish, 1947–50*

Year	Chinook	Steelhead	Silvers
1947	3,000	1,000	100
1948	3,100	600	0
1949	1,000	600	0
1950	2,000	700	50

ANALYSIS OF COMMERCIAL CATCH

Indian commercial catch

The Indian fishing is entirely for commercial purposes during the open season, and the fish are bought on the grounds by buyers who erect cable cars to central areas on the islands. Some of these additional cables are operated only for the commercial season and are removed when it is over. Allegiance to the different buyers by fishermen depends to a degree on comparative prices. A fisherman usually sells all of his fish throughout the season to the same buyer unless the buyer fails to raise his price when competitors raise theirs. In some cases the buyer maintains his business from year to year by loans to fishermen in time of need or during the off season. Occasionally a wildcat buyer comes in, usually a small private buyer or butcher, and pays 3 or 4 cents a pound more than the regular buyers. Many of the Indians sell to him because the profit realized on several hundred pounds of fish is considerable. In general the price is lowest at the beginning of the season and gradually increases.

The catch by nets at different locations varies considerably. During the peak of the run some fishermen make as much as $1,000 in a single day. Many make several hundred dollars for a few days, and the majority have a few days over $100.

The Indian dip net fishery accounts for the majority of fish caught above Bonneville, although gill nets and seines fished by white fishermen account for

appreciable numbers of fish. The complete elimination of fixed gear in Oregon (including seines) in 1950 resulted in an increase in the percent of fish caught by dip nets and gill nets. This same situation resulted when fixed gear was eliminated in Washington State in 1935 (Johnson, Chapman, and Schoning, 1948).

Importance of Indian commercial fishery

In order to assess the importance of the Indian fishery the take has been compared with the total for the Columbia River for each important species for the years of record. Furthermore, since the commercial fishery above Bonneville Dam has often been criticized as being detrimental to the salmon runs, it has been deemed worth while to include a comparison of the Indian take with the total catch above Bonneville (figs. 12–16, and tables 8 and 9). The reader is here reminded that Celilo Falls and the entire Indian fishery lie above Bonneville Dam.

The appreciable Indian subsistence take during the various closed seasons, at which time sales cannot be made, as is mentioned elsewhere in this report, is not recorded in the commercial landings. While the Oregon Fish Commission's staff has in recent years obtained considerable catch data covering these otherwise unknown takes, no closed season data are available for earlier years. Consequently, it is not possible to compare all the catches throughout the period of record. It is logical, therefore, to consider only the regular commercial catches, keeping in mind that closed season catches are not included. The percentage total take by the Indian fishery is higher than that indicated by their regular commercial catches.

The Indian landings of spring chinook (January to July, inclusive) and their relationship to the rest of the river are depicted in figure 12 and table 9. Although fluctuations have occurred, since 1938 the annual Indian take has averaged 85.6 percent of all spring chinooks caught above Bonneville Dam. For the same period their annual landings have been 9.7 percent of all spring chinooks landed on the Columbia River. Table 9 shows the actual percentages for each year.

As shown in figure 13 for the past 13 years, the Indians have caught an average of 67.8 percent of all fall chinooks (August to December inclusive) landed above Bonneville and 12.3 percent of the total river landings.

The total chinook landings (i. e., spring and fall combined) as percentages are shown in figure 14. For landings above Bonneville an average of 69.9 percent of the chinooks have been caputred by dip nets. It is interesting to note the effect of the elimination of fixed gear (i. e., seines, traps, wheels, and set nets) on the Washington side of the river with respect to the Indian catch. For the 7 years prior to 1935 the dip nets landed an average of 2.4 percent of all chinooks landed in the Columbia River. Since 1935 the average yearly landing has jumped to 11.2 percent. It should be pointed out that other types of fishing gear remaining in the river also profited by the regulation change.

The seines continued to operate immediately below Celilo Falls until September 14, 1950. After that date only dip nets and gill nets were allowed to fish, and the percent of fish caught by dip nets increased appreciably. In 1950, 71.9 percent of the fall chinooks caught above Bonneville were caught by dip nets, compared to an average of 67.5 percent between 1938 and 1949 inclusive. With the complete elimination of fixed gear in the Columbia River now in effect, the dip nets will presumably catch an even greater percentage of the total catch.

The importance of the Indian blueback landings on the Columbia River is graphically shown in figure 15 and the actual percentages are given in table 9. The dip net catch as a percentage of the landings above Bonneville Dam has varied widely since 1938, from 65.1 to 98.0, but the average has been 83.0 percent. The Indian landings of blueback show even more markedly than the other species the effect of the elimination of fixed gear in Washington in 1935. From 1928 through 1934 the Indian catch on the average represented 5.6 percent of all blueback caught in the Columbia River. From 1935 through 1950 this increased to 29.3 percent, certainly an appreciable portion of the catch.

Figure 16 indicates the importance of the dip net steelhead landings. Since 1938 on the average the Indians have landed 73.0 percent of all steelhead caught above Bonneville Dam. The trend has been downward in the last few years, however. During the 7 years prior to the gear change in Washington, the dip nets caught 2.8 percent of the total river steelhead landings. Since the change the percent has increased to 14.2.

All of the landings mentioned above included only the fish sold to commercial buyers. In addition, as was previously pointed out, appreciable amounts that were never recorded were bought by tourists, or utilized by the Indians for their own subsistence.

Table 6 summarizes the total Indian take in pounds during the 4-year period 1947–50. Not included in these figures is a small unknown poundage consumed by Indians during the open commercial seasons.

DISCUSSION OF CATCH

Disposition of fish during the closed season

During the closed seasons, it is illegal for Indians to sell their catch commercially, and they fish primarily for their own needs. Many of them can satisfy their personal requirements for the coming year by fishing only a few days, although others fish every day. The majority of the catch is taken home and dried, smoked, kippered, salted, or canned; some is sold, but violators are in the minority. These illegally sold fish are bought by tourists and various fish buyers and markets within a radius of 100 miles. At times dealers come to the grounds, but usually the fish are transported to their shops. Regardless of the ultimate destination of the fish, they have been counted and recorded by checkers, no segregation of landings being made with respect to fish sold or retained by fishermen.

The fall catch is composed of chinooks, steelhead, and silvers and an occasional sturgeon. During the closed season, some of the smallest steelhead and chinooks are thrown back into the river, because they are too small to be easily prepared for drying. When only a part of the total catch is wanted, selective retention of the fish is exercised by the Indians. Only a few fish which are returned to the water are injured, the smaller ones sometimes gilling in the large mesh of the dip nets.

Young boys often fish periodically during the day when no one is fishing at some scaffold which is available to them (fig. 17). Fish caught by them are occasionally left on the rocks to spoil in the hot sun.

Drying is probably the most common method of preserving fish by the Indians and is accomplished by cutting the fish in slices lengthwise and hanging them on horizontal poles in dark sheds (fig. 18). The drying process takes from a few days to about 2 weeks, depending on atmospheric conditions, and when finished, the dried fish are sacked and stored in a warm dry place. In recent years families of Indians have increasingly resorted to canning, the fish being brought to commercial canneries for custom canning. The widespread recent use of freezing lockers has provided another method of preservation.

Conditions affecting the fishery

Various conditions seem to affect the landings in different ways. The Indians have explanations for many of the sudden changes in the magnitude or composition of a day's catch. An example of this is shown on September 17, 1947. It rained the night of September 16 and intermittently the following day. The catch per unit of effort decreased noticeably on September 17; such a combination of causes and effects has been noticed before. The Indians believe the rain washes the slime and blood of dead fish off the rocks and into the river causing other fish to temporarily halt their migrations. It has been observed on other occasions that the movements of fish are restricted on very windy days. Sand from the surrounding hills is blown into the river on such days, and it is believed by the Indians that sand in the water lodges under the opercles and in among the gill filaments, hampering breathing, and thus curtailing migration.

Migration seems to slow up when the river becomes muddy, but after a few days of clearing water, the migration increases. This was shown when the water became muddy on September 20, 1947, reportedly due to a cloudburst on the John Day River. Fishing intensity decreased to a degree where only a few Indians fished. When the river cleared somewhat, the fish began to run again and fishing success increased.

Water conditions also affect the composition of the catch. Whenever the river is muddy few chinook are caught, steelhead comprising the bulk of the catch. The steelhead became lighter colored, particularly on their backs, whenever they moved during muddy water conditions.

Climatic conditions govern the fishermen's actions to a degree also. If the weather is disagreeable due to rain or wind, the Indians frequently land their fish earlier than usual during the day. As a result few landings are made after 6:30 p.m. on days when inclement weather prevails.

During the closed season some Indians do not fish on Saturday or Sunday morning due to a socially active preceding night. This is reflected in lower landings for those days.

Condition of fish

Little information has been obtained concerning ripeness, average weight, and sex ratio of the fish landed at Celilo in the fall.

In general the bulk of fish caught during the first 2 weeks of September are bright fish, the fish becoming somewhat darker as the season progresses. Occasionally fish were examined to determine the degree of maturity of the gonads. After September 15, a few ripe fish were found, but they were greatly in the minority.

In 1949, 2,024 chinook salmon were sampled at Seuferts' Cannery between September 14 and 16 (table 5). These fish were caught at Celilo by both seine and dip net, both of which types of gear are theoretically nonselective. However, there was considerable difference between the average weights of each type of gear and mixed gear. The average weight of 1,419 seine-caught chinooks was 15.4 pounds, and the average weight of 235 dip-net-caught fish was 18 pounds. An explanation of this difference might be found in the fact that the fish involved in the dip-net samples may have come from fishing locations where large fish predominated. The seine-caught fish probably represent a fair picture of the average weight of the fall chinook population at Celilo, but such fish cannot be regarded as representative of those caught by dip net.

In the same sampling operation 659 steelhead caught in mixed dip net and seine gear weighed an average of 9.2 pounds each, and 44 silver salmon averaged 7.1 pounds each.

The average weights of dip net caught chinooks and steelhead are lower at the cannery than was indicated by sampling on the fishing grounds. This could be explained by the fact that the Indians tend to retain all fish caught when they are sold during the open season, while they keep only the larger fish when fishing for their own use during the closed season.

TABLE 5.—*Random weight samples of Celilo fish at Seuferts' Cannery, September 1949*

Date	Gear	Number of fish	Total weight	Average weight	Species
	CHINOOK				
Sept. 14	Seine	583	8,942.5	15.33	Chinook.
Sept. 15	do	231	3,695.0	15.99	Do.
Sept. 16	do	86	1,452.0	16.88	Do.
Do	do	519	7,740.0	14.91	Do.
	Total, seine	1,419	21,829.5	15.38	Do.
Sept. 15	Seine and dip net mixed	370	5,752.0	15.5	Do.
Sept. 14	Dip net	141	2,355.0	16.7	Do.
Sept. 16	do	94	1,871.0	19.9	Do.
	Total, dip net	235	4,226.0	17.98	Do.
	Grand total, mixed gear	2,024	31,807.5	15.72	Do.
	STEELHEAD				
Sept. 14	Dip net	42	420	10.00	Steelhead.
Sept. 16	Seine	617	5,676	9.20	Do.
	Total, mixed	659	6,096	9.25	Do.
	SILVERS				
Sept. 16	Mixed, dip net and seine	44	311.5	7.08	Silver.

EVALUATION OF THE INDIAN CATCH

Since The Dalles Dam, when built, will eradicate the entire Indian fishery at Celilo Falls, it is pertinent to include herein a monetary evaluation of this fishery. The following evaluation is one method of assessing the value of the fishery; any value will be only one method of approach to the complex problem of fixing a value to the harvest of a natural resource.

Assessment of the value of the total yearly catch can be divided into two phases: first, the value of fish sold commercially and to tourists; and second, the value of the closed season salmon catch consumed by the Indians themselves. Fish consumed fresh by Indians during the open commercial season is not included, as almost all of the fish caught during open seasons is sold rather than eaten fresh.

Commercial and tourist values

Average landings for the 4-year period 1947–50 were used for computing values (table 6). The current 1951 prices paid for the various species of salmon sold commercially at The Dalles were used in arriving at the values given. The value of the salmon sold to tourists was also based upon the current price during the 1951 season.

Since the commercially sold fish during the open season are the chief means of livelihood during the year for the Indian fishermen, the prices received by the Indians for these fish were used. The total average annual value for the 4-year period 1947–50 for all species sold is $500,000.

In this case the price received by the Indian fishermen was used rather than some wholesale price since any additional value accrues to the processor.

Closed season subsistence catch

Evaluation of the closed season subsistence catch must be treated differently from open season commercial catch because the Indians depend upon these fish for their year's food supply. If the Celilo fishery were eliminated, the Indians presumably would buy the fish which they formerly caught themselves.

Average closed season landings for the 4-year period 1947–50 were used, with the exception of spring closed season catches, when only estimates for 1949 and 1950 were available. Prices used are based on the 1951 level, and are the cost of buying round fish from the distributor. It is assumed that the Indians will continue to do their own processing. The total annual value of the closed season catch on this basis is $200,000.

No correction factor has been used to allow for the increased demand by a new Indian market on a smaller supply of fish due to the elimination of the Indian portion of the Columbia River catch. This effect, if any, would be slight, and would be overshadowed by other independent conditions such as variations in the size of Columbia River runs, imports of foreign and Alaska fish, and fluctuations in prices.

Total annual value

The total annual present value of the Celilo Indian fishery, based on the 4-year average catch, 1947–50, including closed season subsistence catch, open season tourist sales, and open season commercial sales is $700,000.

If it is assumed that the elimination of the Indian fishery will completely destroy the means of livelihood of the Indian fishermen, reparations sufficient to supply them with $700,000 annually would have to be granted. If this were in the form of Government bonds at 3 percent annual interest, a total amount of $23,000,000 would be necessary to compensate the Indians for the loss of the Celilo fishery.

SUMMARY

1. The Indians at Celilo Falls catch an average of over 2,600,000 pounds of fish each year, in dip nets in a manner very much the same as used by their ancestors.

2. The bulk of the fish caught at Celilo Falls is from the upriver fall run of chinook salmon which spawns in the main Columbia, between Pasco and Rock Island Dam and on the main Snake River between Swan Falls and Marsing.

3. Until the present study, the magnitude of the Indian closed season subsistence catch, averaging 500,000 pounds annually, has been unknown.

4. Most of the fall closed season catch is dried for home use by the Indians during the year although some is sold illegally.

5. The annual average of 50,000 pounds of fish sold directly to tourists is relatively insignificant when compared to the amount sold through regular commercial channels during the open season.

6. The elimination of fixed gear in the Columbia River has increased the percentage of total fish caught by the Indians. In the case of chinooks, the Indian commercial catch increased 8.8 percent.

7. The average annual value of the total Indian catch 1947–50 is estimated to be $700,000.

ACKNOWLEDGMENTS

The authors wish to thank the many persons who cooperated in gathering data for this report. Seufert Bros. Cannery at The Dalles, Oreg., furnished evaluation and commercial catch data. Chris Kito aided in tabulation of lower cables area catch. A number of temporary student-biologists assisted in gathering closed season catch data, particularly H. L. Rietze, R. E. Loeffel, and J. R. Donaldson. Dr. Seymour Fiekowsky, Reed College, provided the basis for the evaluation of the Indian catch.

REPORT ON THE DALLES DAM CONSTRUCTION MADE TO THE COLUMBIA BASIN INTERAGENCY COMMITTEE JANUARY 24, 1952, COL. T. H. LIPSCOMB, DISTRICT ENGINEER, PORTLAND DISTRICT

The commencement of the construction of the Dalles Dam is an important milestone in the progress of the Columbia Basin. To some of those present at this meeting it promises the attainment of a goal of many years of effort. The Dalles project was first investigated by Mr. Harza as an engineering consultant for the State of Oregon in 1914 and 1915 and reported in 1916. The first report made by the Corps of Engineers to Congress on the Dalles Dam was in the original "308 report" to the Sixty-ninth Congress in 1932. The Dalles Dam was authorized by Congress in the River and Harbor and Flood Control Act of 1950. The first funds for construction were appropriated on the 24th of October 1951, and our first contract for construction was let on January 22, 1952, to the S. A. Healy Co. of White Plains, N. Y. Construction will start in 2 or 3 weeks. This is an important unit of the main control plan for the Columbia River. Of approximately 15 main dams, it is the seventh to get under way. As a part of the main control plan, it will provide over 1,200,000 kilowatts of installed capacity out of approximately 6,500,000 kilowatts of Federal power existing or now under construction and toward the goal of the main control plan which will provide over 10 million kilowatts of installed power. This power cited above to be produced by the Dalles Dam will be equivalent to 2½ million tons of coal per year or 9 million barrels of oil per year.

The navigation locks for the Dalles Dam, width 86 feet and length 675 feet and depth over the sill at low water 15 feet, will replace the obsolescent set of three locks having a width of only 40 feet and a length of only 265 feet and depth over the sill at low water of only 7 feet. The elimination of this obsolete set of locks as an obstacle to navigation, and the comparative saving in time in going through the new single lift lock, will be an important asset to the development of navigation on the Columbia.

The generators to be installed in the Dalles Dam powerhouse will be 78,000 kilowatts each. It is expected the initial power will be on the line in November 1957, and that additional generators will be added, one every 3 months. A total of 14 generators will be installed to utilize the water available with present upstream storage. This will give an installed capacity of 1,092,000 kilowatts. Two additional generators will be added when the storage provided by the main control plan is complete, giving a total installed capacity of 1,248,000 kilowatts. The dam as initially constructed will provide substructure for six more generators which would be added as upstream storage, in addition to that provided by the main control plan, becomes avilable to the system. The proximity of the Dalles Dam to the load centers cuts the cost of construction of transmission facilities and the power lost in transmission. This, plus the important fact that the Dalles Dam discharges into the upper end of the Bonneville pool, makes it admirably adapted for taking the peaks off of the area power load and thereby permitting the more distant dams to carry a more constant load with an over-all savings in cost. Because of these peculiar assets, the addition of generators to the Dalles Dam may be eventually more rapid than is presently envisioned.

In the hour and one-half which has been alloted to the Portland district by the Columbia Basin Interagency Committee today, I will first discuss some of the broad and important problems relating to the over-all construction of the project. Mr. Mark Nelson, the chief of the planning branch of the engineering division of the Portland district, will then discuss the principal engineering features and characteristics of the dam itself and its appurtenances. Mr. Hubert Elder, the resident engineer for the Dalles Dam, will then discuss the program of construction and the construction force required, together with its impact on the town of The Dalles and nearby areas.

The first subject which I should like to discuss is that of relocations. The principal items to be relocated are the Union Pacific Railroad, United States Highway No. 30 (both on the Oregon shore), and the S. P. & S. Railway on the Washington shore. The extent of relocations required is determined by the establishment of the pool elevation of the Dalles Dam at 160 feet above mean sea level plus the backwater curve for floods which can be foreseen. Our studies are primarily based upon the flood of 1894, which was the largest flood of history and amounted to 1,240,000 cubic feet per second at The Dalles. Although complete records on this flood are not available, it is possible to compute from that information which is available and other engineering data what the actual stages of that flood were and what the stages of that flood would be today if the flood were repeated and the Dalles Dam was in being. However, there is one very important factor which today must be considered. If the flood of 1894 were to occur today, it would not have the same stage effects that it had in 1894. This arises out of the fact that much upstream storage has been constructed which would regulate this flood and reduce its stages. When we take into account the storage which is already constructed or under construction, we find that it amounts to 12,500,000 acre-feet and that this flood-control storage would cut the discharge at The Dalles from 1,240,000 cubic feet per second to 1,050,000 cubic feet per second and result in a general lowering of the stages upstream from the dam by approximately 4 feet. As the main control plan develops, it is expected that the flood discharge at The Dalles due to a flood similar to that of 1894 will be cut from the original 1,240,000 cubic feet per second to 800,000 cubic feet per second. The frequency of the 1894 flood is approximately once in 150 years. We therefore feel that it is a sound and conservative practice to base our relocations on the stages which would be obtained if the 1894 flood were to occur but were to be regulated by the effect of the flood-control storage which has been constructed or is under construction or is under advanced planning.

Our policy in negotiating agreements for relocations will be to make the relocations as good as the abandoned utilities were insofar as possible. If the owners of the utilities wish improvements incorporated into the reconstruction, and this is often a sound economic practice, we are willing to incorporate such improvements, but the owners will be expected to contribute toward the additional cost involved. The principal items of relocations required are as follows: Union Pacific Railroad, about 24 miles of line extending from the upstream limit of the yards at the town of The Dalles; the S. P. & S. Railway on the Washington side, about 15 miles extending from a point below the dam up to approximately the downstream limits of the town of Wishram. The Wishram yards are not to be relocated, but will be protected as necessary by a levee. This solution will not impose problems of drainage to the people of Wishram since the river in all floods including the flood of record will not actually be against the levee, but will be below the level of the town. The levee will be low and will simply provide for protection against wave or wind effect, and even for this will be needed only once in several decades. On the Oregon side, United States Highway No. 30 will have to be relocated from approximately the dam site upstream to about the same distance as the Union Pacific Railroad.

The Oregon Trunk Railroad bridge will not be affected to any important degree by the lifting of the level of the river. However, it is expected that an additional lift span will have to be added to meet the future requirements of navigation.

The relocations required for the Dalles Dam stop at about the point where the relocations required for the John Day Dam will begin. There will therefore be no expense for a double relocation of the utilities due to the successive construction of these two dams.

The next subject which I would like to discuss is that of the relocation of the Wasco County bridge. Wasco County has desired a bridge over the Columbia River near the town of The Dalles for many, many years. A possible conflict between the Dalles Dam and the Dalles Bridge for the use of the desirable site immediately downstream from the Celilo locks was foreseen by the engineers and reported to Congress in Interim Report No. 1, dated March 21, 1946. At this time, it was thought that the bridge would be completed prior to the dam, and at a location somewhat downstream from the dam. It was thought that the approach on the Washington side to the bridge would be by a rock-fill causeway over the rocky island on the Washington side, and that when the dam was constructed this causeway would have to be replaced by an open structure which would allow the water from the spillway to pass through it. The cost of modification was estimated at $421,000. Wasco County applied for a permit to build the bridge in 1949. Approximately 1 year lapsed between the time of application

and the time the permit was issued. Because of the foreseeable conflict the engineers attempted to get Wasco County to accept voluntarily a stipulation in the permit to the effect that modifications to the bridge if required by construction of the dam would be made at the expense of the county. The county was planning to finance the bridge by the sale of bonds, and such a provision would have rendered the bonds unsalable; the county was therefore unwilling to accept it voluntarily. The engineers were not empowered to force such a provision on Wasco County, since their jurisdiction is limited to insuring that such structures do not interfere with navigation or improvements to navigation, and the engineers are not authorized to deny the use of land to the county simply because we had a project which would utilize the same land provided Congress were later to approve the project and were later to appropriate money for its construction. Accordingly, the permit was eventually issued without any qualification. Shortly thereafter the construction of the Dalles Dam was authorized, but even then it was not expected that the dam would be constructed until after the bridge was completed. However, the Korean war greatly increased the urgency of developing additional power in the Pacific Northwest, and we are fortunate that the Dalles Dam is to be constructed somewhat earlier than even its most ardent enthusiasts could have expected at the time of authorization. In the budget presentations to Congress on which the initial authorization funds were sought, it was estimated that the cost of modifying the Wasco County bridge to avoid conflict with dam requirements would be $902,000. However, during the summer and early fall of 1951, an important new consideration came to light. Experience during the construction of McNary Dam showed that the Columbia River basalt, which is the underlying rock of both McNary and the Dalles Dam, would erode to a rapid and serious degree in high water velocities such as those which might be expected below the spillway of the dam. Checks of the newly constructed model of the Dalles Dam at the Bonneville Hydraulic Laboratory of the Corps of Engineers showed that the velocities which would exist downstream from the spillway as then envisioned would be sufficiently great to cause serious erosion of the rock. This information called for some revisions in the lay-out of the dam. These revisions were readily made and did not cause any increased expense to the Government. However, the same information dictated that the Dalles Bridge must either go over the spillway of the dam or must be transferred to a new site which would not be in the discharge area of the dam spillway. Money for construction of the Dalles Dam was appropriated on October 24, 1951. We promptly initiated studies with the representatives of Wasco County, and on November 19, 1951, at a meeting with them suggested the plan of putting the bridge over the spillway. However, in addition to increased expense this plan had the important disadvantage of delaying the completion of the bridge until the spillway was completed which would be in 1957. This was considered highly undesirable by Wasco County and also undesirable from our viewpoint, since completion of the bridge will be an asset to the construction of the dam. Wasco County then proposed an alternate site immediately downstream from the dam which would have the advantage of delaying the completion of the bridge only about 9 to 12 months and which would permit the steel already purchased for the original bridge to be fully utilized. This location also would permit the use of the same access route on the Washington side which had been constructed for the original bridge site. This proposal is being jointly studied by the Corps of Engineers and by Wasco County and appears to have every prospect of being the most sound and economical solution to the present difficulty. The extra cost of the bridge resulting from this relocation is estimated at between one and a half to two million. The important problem of the legal liability of the Government, the county and the bondholders with regard to this extra cost is still being studied. No agreement has been made by anyone, but negotiations are amicable, and we will report progress that is made.

Lastly, I should like to discuss the problem arising out of the Indian fishery at Celilo Falls. I should like to emphasize that the elimination of this fishery would be an important boon to fish conservation. The Indians at Celilo Falls now take about one-third of all fish passing the Bonneville Dam. These fish are brood fish and are a great asset to future generations of fish. It is estimated by fish authorities that, for every fish which passes above Bonneville to spawning grounds, four fish come up the river again at the end of the approximately 4-year cycle for return to the spawning ground. Construction of the Dalles Dam would drown out the Indian Celilo fishing sites after the 1956 fishing season and before the 1957 fishing season. No alternate sites of equivalent value are available except in the fish ladders, and the removal of fish from the fish ladders, although

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an economical solution of the problem from the construction viewpoint, would not be a sound plan from the conservation viewpoint. It therefore appears that a monetary settlement of some kind will be necessary. In order to arrive at a monetary settlement, we must determine how much fish is being taken, who is taking the fish, and who has a right to take the fish. These problems are under study in a large number of ways. The Oregon Fish Commission has recently released a report based on their study of the subsistence fishery for the past 4 years plus a study ot the records of the commercial fishery of the Indians for a much longer time. Their study places a value on the Indian fish take which is based on 1951 prices and sets this value at about $23 million. Last year the Fish and Wildlife Service of the Department of the Interior in cooperation with the Corps of Engineers, and utilizing construction funds, took a count of the Indian fish take. This year that count will be repeated, but the feature will be added that we will attempt to determine how much fish is being taken by each tribe. We anticipate little difficulty in this respect since we believe the Indians will be glad to report their tribe with a view to making the best possible showing as to what their tribe's benefit is. Additional surveys of other types, which will contribute to our over-all knowledge of the Indian fishery, are under way. Negotiations with the various tribes have been started and our representatives have visited each of the principal tribes and their attorneys. It is important to note that there will be little disruption of the Indian fishery until 1957. The principal sites at Celilo will not be flooded out until that time and our highway, railroad, and other relocation activities will be geared to provide a minimum interference with the Indians' activities. This provides adequate time for negotiation and study. One important requirement is that the Indians shall cooperate among themselves. At the present time there is not one of the principal claiming tribes whose rights to the Celilo fishery is not denied by one of the other principal claiming tribes.

There have been quite a number of suggestions as to the form which the settlement of the Indian fishery problem should take. One suggestion has been that the Indian fishing rights under the treaty of 1855 be settled on a basin-wide basis. This has the advantage of eliminating some conflicts between the claims against The Dalles Dam and other claims pending before the Indian Claims Commission. However, such a settlement is not within the authority of the Corps of Engineers and would require special legislation and probably would take considerably more time for settlement. Our present authority arises out of our authority to construct the dam, acquire necessary real-estate rights and relocate railroads, highways, and other facilities which might interfere with the proper functioning of the dam. There have also been a number of suggestions as to the form that the payments should take and the source from which they would be derived. I will cite some of these suggestions without attempting to either approve or disapprove them, but merely in order that they shall be available for discussion. One suggestion has been that the value of the Indian fishery be paid in cash as a lump sum. Another suggestion is that this perpetual Indian resource be replaced by perpetual annual payments either fixed in dollar amount in advance or tied to the price of fish or other protein foods by being specified as the value of so many pounds of fish. It has further been suggested that these perpetual payments be maintained as interest on a capital amount taken from construction-fund sources, or that they be paid by adding a surcharge on to power revenues. It would apper that either of these plans would increase the cost of power since the establishment of this fund by use of construction money would increase the cost of the project and, therefore, the amount which must be repaid to the Federal Treasury from power revenue. Another suggestion has been made that the amount to be paid be paid out in equal installments over a 10-year period. There is no unanimity of opinion at the present time as to how the settlement should be made, but progress is being made in negotiations and it is believed that there is ample time to study fully all aspects of the problem and arrive at a sound and equitable solution. It is believed that the solution finally arrived at must be based upon equity as it may be impossible to untangle all of the legal technicalities involved in the claims and counterclaims of the various Indian tribes. I will now turn over the meeting to Mr. Mark Nelson, chief of our planning branch of the engineering division, for discussion of the engineering features of the dam and its appurtenances.

REPORT ON LAY-OUT THE DALLES DAM AND RELATED FACILITIES MADE TO THE COLUMBIA BASIN INTER-AGENCY COMMITTEE, JANUARY 24, 1952, BY MARK L. NELSON, CHIEF, PLANNING BRANCH, ENGINEERING DIVISION, PORTLAND DISTRICT

In presenting a description of the lay-out of the Dalles project, it is believed that a better understanding will be had of this project if some of the past investigations are reviewed. The progressing investigations are those from the date of the interim report of March 1946, to the investigation and studies for the 308 Review Report of October 1948, to the later investigations and surveys for the letter report of March 1951, and then to the most recent investigations incident to the design and present lay-out. After this review the project will be described in general detail giving some of the geological characteristics of the area, a description of the source of construction materials, the significance of constructing the cofferdam and powerhouse on schedule, and a discussion of the main river closure section.

As a result of the congressional directive issued by the Congress in September 1943 for a review report on Columbia River and tributaries, an interim report was submitted in March 1946 on the Dalles project because at that time there was a growing need and demand for a power project at this location. The report presented studies of five alternative lay-outs referred to as plans A, B, C, D, and the Celilo plan. Of these five, four were located within the general area of the project as now recommended for construction. The fifth plan, as its name implies, was located at the site of the Celilo Falls. On the basis of economic and hydraulic superiority, the Interim Report Study resulted in recommending plan B. This recommended plan presented a lay-out very similar to the one now to be constructed. Brief descriptive data on the principal features of the plan follow. The powerhouse provided for 12 units to be installed initially with a capacity of 905,000 kilowatts. Three substructure units were included with space provision for additional units. The spillway consisted of 28 50-foot bays. The navigation lock was to be 86 feet by 500 feet clear plan dimensions. Two fishways were included, one at each end of the spillway. The left abutment was to be a concrete gravity nonoverflow dam. The main closure section of the river was to be a rock and earth-fill structure.

Further studies of the lay-out at the Dalles were continued for the 308 Review Report which was submitted in October 1948. The plan for the Dalles Dam was included in appendix L and the general project location and alinement as recommended by plan B, referred to above, was not altered. Additional studies, however, did result in certain project alterations. The powerhouse installed capacity was increased from 12 to 14 units, with a total installed capacity of 980,000 kilowatts. Instead of constructing substructure for three units, the powerhouse was planned with completed structure for two additional units, each complete except for the machinery. Space was provided for four future units instead of three. This plan resulted in provisions for an ultimate installation of 20 powerhouse units in lieu of the former provisions for an ultimate of 18 units. The spillway was changed from 28 to 30 50-foot bays. The plan dimensions of the navigation lock were increased to 86 by 675 feet in lieu of the former 86 by 500 feet. In addition to the former two fishways, one at each end of the spillway, a third fishway was provided, located between the powerhouse and the rock fill closure section.

The letter report, dated March 15, 1951, presented information on the project in fulfillment of a directive by higher authority to firm up the following items:

1. Final project axis.
2. Definite project lay-out.
3. General preliminary design of major items.
4. A reasonable and definite construction schedule.
5. An accurate detailed cost estimate.

In fulfillment of the above directive, three additional project lay-outs were presented. Each of the three lay-outs were substantially the same in site location as formerly recommended. Some change in axis alinement was mandatory because a larger powerhouse with added units was considered necessary to satisfy the requirements for a plant with greater peaking capability. The following are revisions presently recommended in the plan of the letter report. The left abutment was changed from a concrete gravity nonoverflow dam to an earth and rock-fill dam as an economy measure. The powerhouse was increased from an ultimate installation of 20 units to 24 units. The 24 units were planned to be constructed as follows: (*a*) 16 units installed initially with a capacity of

1,120,000 kilowatts; (*b*) subsequent structure for 4 additional units; (*c*) skeleton substructure for 4 future units. The size of units to be installed was 70,000 kilowatts. The spillway size was unchanged, but its alinement was segmented or curved on an arc shape as compared to the former straight alinement. The idea of curving the spillway was to spread the flow out over a greater length, thereby dissipating the energy. With this lay-out the spillway was to be augmented by a downstream secondary or ring dam to preclude the necessity of a third fishway. Two fishways were shown; one at each end of the powerhouse. As stated above, elimination of the third fishway at the Washington shore end of the spillway was anticipated as a result of providing a ring dam downstream from the spillway and so directing the flows from the spillway in such a manner as to cause the fish to be directed to the other fishway. In addition to the lay-out described above, two alternative lay-outs were presented, each featured the powerhouse and spillway interchanged from the locations shown on the chart. One of those two plans was alined so that the Dalles Bridge might possibly remain in its former location. The other would eliminate the bridge, but each of these two plans was found to be too costly, and the economics did not warrant their recommendation, although in some respects they possessed certain advantages over the recommended plan.

Subsequent to the submission of the letter report, due to the imminence of appropriations, hydraulic model studies were undertaken. The lay-out first constructed in the model was that of the plan recommended in the letter report with the curved or segmented spillway. This plan was found to possess certain unfavorable hydraulic characteristics, principally in regard to the spillway. These conditions dictated more exhaustive studies of the spillway lay-out and its approach channel. Upon further consideration, additional lay-outs of the spillway were devised and tested. In addition, the powerhouse was shortened somewhat due to a reduction in the total number of units from 24 to 22 by virtue of increasing the unit capacity from 70,000 to 78,000 kilowatts. The lay-out designated as plan IV was then tested. The powerhouse for this lay-out was located in the same position as in the letter report, but shortened as indicated above. The spillway was divided somewhat in that an auxiliary one was located on the Oregon side of the main river closure. Five bays were located in this position and 25 bays were located in the main river in a striaght line more or less normal to the line of flow. These 25 bays were each 50 feet in width. The spillway connected the downstream end of the powerhouse and the navigation lock. Another lay-out was tested with the spillway split, half of it in the main river channel normal to the line of flow, and the other half above the powerhouse, which in turn was shifted downstream to permit an installation of 14 spillway bays between the main river closure and the upstream end of the powerhouse. In this plan, three fishways were provided, one at each end of the powerhouse and one located between the upstream end of the spillway and the rock closure section. Another plan, known as plan VI was investigated and is the one shown on the chart. It features the entire spillway alined in one section normal to the river flow and joins the navigation lock. A gravity nonoverflow section extends downstream from the powerhouse to connect with the spillway. This plan, known as plan VI, which is almost identical with that recommended in the 308 report except for the number of power units, was found to be not only the most economical, but also to possess the most efficient hydraulic characteristics. This is the plan which will be described to you in more detail today.

In describing the project lay-out, I will proceed from that part of the project on the Washington shore and progress to the Oregon shore. There is a small earth- and rock-fill nonoverflow structure forming part of the dam and connecting the Washington shore to the navigation lock. The navigation lock, the next major feature of the project, is situated as shown on the chart and in clear plan dimensions is 86 feet by 675 feet with a minimum depth over the gate sills of 15 feet. The elevation of the lower sill is 54.5 feet mean sea level, and the elevation of the upper sill is elevation 140. This provides, as stated, 15 feet of minimum depth when the Bonneville pool is drawn down to elevation 69.5 from its normal elevation of 72 feet mean sea level. On an interim basis a maximum depth of 24 feet prevails when Bonneville pool is held at 78 feet mean sea level, but normally 18 feet is available when the Bonneville Pool is at 72 feet. The normal pool for The Dalles Dam is 160. With the pool at this elevation the depth over the upper sill would be 20 feet, but with a drawdown of 5 feet at The Dalles pool, 15 feet would be the minimum depth prevailing. The upstream and downstream approaches to the locks are protected by a guide wall on the landward side and a guard wall on the riverward side. The filling and emptying system for the locks

will be the conventional manifold type identical with that for McNary. During emptying the velocities immediately below the downstream lock gates will be 7 to 8 feet per second. The filling and emptying time for the lock is estimated to be between 10 and 12 minutes. The lock is a single lift lock with a normal lift of 87.5 feet. The lock can be constructed practically in the dry, and will be in solid rock. The walls of the lock will be plastered concrete walls, anchored to rock except in those locations where the top of the lock wall is above the rock line, and in those instances, the walls will be free standing monoliths. The economics of the single lift lock are more favorable for this type of a structure than a tandem lock. In addition, the single lift possesses many advantages such as decreased lockage time, and simplified operational characteristics. The project lay-out has been so engineered as to permit the construction, if and when needed, of a second parallel lock with wider and longer dimensions. A comparison of the lock dimensions to navigation equipment now on the river finds the largest barge in use by one of the principal navigation companies is 40 feet by 176 feet. The largest known barge on the river is 45 by 203 feet. It can be seen that the lock dimensions will be entirely adequate for the present traffic. During the 1951 calendar year, 1,040,000 tons of cargo passed through The Dalles-Celilo canal. In the 308 review report the estimated average yearly tonnage including both upstream and downstream traffic at The Dalles is 4,827,000 tons. At the end of a 50-year period it is anticipated that the tonnage will be in the order of 5½ million tons.

The spillway is the next principal structure. It is situated practically normal to the river flow. Its function is to pass the spillway design flood without permitting the structure to be overtopped. It also has the dual function of passing a flood comparable to the largest known flood of record, that of 1894, without exceeding the normal pool elevation at the dam of 160 feet, mean sea level. The spillway design flood at The Dalles is 2,290,000 cubic feet per second. This flood is almost twice that of 1894. The spillway design flood is computed from a combination of events which conceivably might be considered the worst possible meteorological conditions which could possibly occur within the basin relative to snow coverage and precipitation. To safely pass this flood, requires 27 50-foot-wide spillway bays. The gates for the spillway are planned to be radial or tainter gates. Each gate will be 50 feet wide and 45 feet high. The piers between the gates will be 10 feet thick. There are a number of reasons for adopting the radial gate. As all of you know, the gates at Bonneville Dam and McNary Dam are what is commonly known as a vertical lift type. The radial gate, however, possesses a number of advantages over the vertical lift. The amount of steel in the gate is approximately two-thirds of that required for a vertical lift gate. A vertical lift gate of the size required at The Dalles would weigh about 410 tons, whereas the radial gate would weigh approximately 260 tons. In addition the radial gate is easier to operate, does not require a massive lifting crane or a heavy deck on the dam to accommodate the cranes, and each gate has individually operated motor hoisting equipment. There will be a service roadway on top of the dam; also there will be two service cranes of 200-ton capacity each. At each end of the dam there will be located a fishway 30 feet wide constructed to a gradient of 1 on 16. McNary is constructed to a 1 on 20 gradient, Bonneville to a 1 on 16. There is no apparent reason why the fishways at The Dalles cannot be constructed to a 1 on 16 gradient. For the spillway and its approach channels there will be about 4,800,000 cubic yards of excavation. The amount of concrete in the spillway dam is estimated at about 400,000 cubic yards.

The powerhouse is the next major feature of the project. As shown on the chart, there will be an ultimate installation of 22 units with a total installed capacity of 1,716,000 kilowatts. Each unit will have a capacity of 78,000 kilowatts. There will be 14 units initially. The superstructure, however, will be built for a total of 16 units. Units 15 and 16 will not be installed until the construction of upstream storage warrants their installation. The remaining units from 16 to 22 will be installed as the needs justify. The turbines are 280 inches in diameter, with a spacing of 86 feet center to center. The wheels will be of the kaplan-propeller type and will be very similar to McNary. The assembly bay will be between units 12 and 13. Railroad access will be to both the upstream deck and downstream deck and generator floor. Two 350-ton cranes will be installed in the powerhouse, one 130-ton crane will be installed on the downstream deck and a smaller crane on the downstream deck; all for service purposes. There will be a fish collection channel constructed in the downstream side of the powerhouse structure as shown on the cross-section. The attraction water for the collection system will be supplied from the draft tube. The collection system

will connect to the fishladder from the Oregon end of the spillway dam and this ladder will convey the fish into the pool over the nonoverflow section. At the upstream end of the powerhouse a future third fishway is planned and it will be constructed when the units 16 to 22 are built or when the need dictates. The maximum height of the powerhouse from foundation to the top of the structure is about 190 feet. There is a total of about 900,000 cubic yards of concrete in the powerhouse structure.

The construction of the powerhouse on schedule is the key to completion of the entire job. The powerhouse must be cofferdammed on the riverward side and through a low section along the upstream side. The riverward cofferdam to be a cellular sheet pile cofferdam and the upstream cofferdam is to be constructed of earth and rock fill. Bids for the cofferdam construction and rough powerhouse excavation were opened on January 22, 1952, and the contract for construction has been awarded to the S. A. Healy Co., White Plains, N. Y. The low bid of this organization was $4,888,600. This bid was very satisfactory to the Government and it is believed that the favorable bid was the result of a very clear-cut plan devised for the cofferdamming. The cofferdam is so designed that its top will be at elevation 95 with provisions so that its top elevation can be increased by the construction of cribs on top of the steel sheet piling to elevation 105. At this elevation, protection will be provided against a flow of 810,000 cubic feet per second which has a frequency of about once in 8 years. The upstream earth and rock fill cofferdam will be constructed to a higher elevation with the top elevation 117 feet mean sea level. The construction of the cofferdam must proceed on schedule and the construction of the powerhouse also must be on schedule because the river diversion at the time of closure is through units 15 through 22. If any delay is experienced in either the construction of the cofferdam or the powerhouse, the completion of the entire project will be delayed accordingly.

The main river closure section is the next principal segment of the project. This closure is to be made by an earth and rock fill. The first stage, to be constructed to elevation 10, will be from 3-ton and quarry run rock. A tolerance of 10 feet in either direction is provided in order to limit the velocities in this section of the river to such a magnitude as will permit the passage of upstream migratory fish. Five-ton rocks will be used to make the final closure of the river. Then, after the closure is made, material will be added upstream and downstream and it will grade from coarse to fine with a graded filter placed between the gravel and the sand and gravel, so as to make the fill more impervious. The final closure is planned to be made after the high water of 1956. It will be made at a time when the flows are in the order of 200,000 to 100,000 cubic feet per second. To close off a flow of this magnitude is unique, but its success is assured as a result of the experience on the river closure at McNary Dam. The fill will contain some 3,600,000 cubic yards of materials. It is contemplated that nearly all of the material will be obtained from the project excavation. In that portion of the fill containing the graded filter and some of the other more closely graded materials they will be obtained from sources nearby. Maximum height of the fill in the main river closure is 275 feet.

It is desired to comment on some of the general geology of the area and on the concrete materials and materials for the rock closure section.

The Dalles Dam site lies in a structural valley where the river has intrenched itself a few hundred feet into the Columbia River basalt formation, which is the predominant bedrock of the area. The Dalles formation, consisting of consolidated sands, gravels, and volcanic ash, covers the basalt on many of the adjacent low-lying hills.

Pleistocene gravels and sands are well distributed in the area and are especially abundant on the North Dalles terrace. Substantial deposits of recent sand and gravels are present along the river upstream from Five Mile Rapids. Natural aggregate for the concrete structures is available from either recent or terrace bars. A mantle of wind-blown sand and sandy-silt covers the intermediate and upper slopes except where bold basalt bluffs are too steep for soil and vegetation.

The site area has been subjected to moderate deformation. Faults are known at Five Mile Rapids, Big Eddy, and Three Mile Rapids. The basalt bedrock slopes gently downstream from Five Mile to Big Eddy, forming a shallow trough through the site area, and then lies practically horizontal between Three Mile Rapids and North Dalles. The location for the dam is so alined that any foundation weakness caused by faults is minimized.

Several basalt flows are present in the site area, however, only four are represented in the foundations of the various structures. Some of the flows contain a

basal unit 10 to 20 feet thick, which in itself has the characteristics of a separate flow. The average thickness of basalt flows, including the basal units, is about 50 to 80 feet. Vesicular zones occur at the tops and bottoms of the flows and occasional zones of scoria and ropy lava are present. Interbeds such as occur at McNary Dam site have not been found at The Dalles site. Most of the flow contacts are pervious in varying degrees; therefore, a grouting program is planned to seal the foundations against excessive seepage around or under the structures.

It is estimated that nearly 5,000,000 tons of concrete aggregate will be required. At the present time, three possible sources are being considered; river sand and gravel from the vicinity of Five Mile Bar, terrace sand and gravel from the North Dalles terrace adjacent to the damsite, and aggregate manufactured from the rock excavated for the project. Sufficient material can be obtained from any one of the three sources. If either of the natural aggregates are used, a processing plant similar to the one at McNary will be required. If the aggregate is manufactured from excavated rock, a crushing and processing plant similar to those at Detroit and Lookout Point will be used. If either of the natural aggregates are used, it may be necessary to blend in sand from another source to meet the requirements for fine aggregates.

The laboratory tests on the river sand and gravel are practically completed and are under way on the other two materials. Present indications are that all three materials will make satisfactory aggregate, but that the crushed basalt will be of higher quality than either of the natural aggregates, with the river material slightly better than the terrace material. On the other hand, preliminary cost estimates indicate that the crushed basalt will be the most expensive of the three materials, with the river material slightly more expensive than the terrace material.

A detailed study is being made to determine the production methods that will be required and the probable cost of production for each of the three materials. This study, and the remaining laboratory tests, will be completed in February and the decision as to which of the three materials will be used will be based on the results. A decision is to be made about March 1 on the use of these sources.

It is estimated that about 3,600,000 cubic yards of material will be required for the closure section. About 60 percent of this will be quarry run-crushed rock obtained from excavation for the dam. The balance of the material will be gravels obtained from deposits in the vicinity of Five Mile bar and sands from deposits in the vicinity of the dam site. The rock will be placed in the river channel at the outlet to Big Eddy in a roughly triangular section and layers of successively finer material will be placed against the upstream face, with a final layer of rock to protect the sand from erosion. If too much water leaks through this section, silt and clay will be dumped on the upstream face after the dam is completed. The water percolating through the dam will carry this fine material into the sand layer and seal it.

In summary of the quantities involved, in connection with the project, it is desired to give a few of the main items. There will be 9,600,000 cubic yards of excavation, which is equivalent to excavating a square mile 10 feet deep. There will be 4,500,000 cubic yards of fill. There are 1,900,000 cubic yards of concrete which is equivalent to paving 1,000 miles of standard concrete highway. There are 80,000 tons of reinforcing steel and 21,000 tons of structural steel. There are 6,400 tons of steel sheet piling for the cofferdams. There are about 70 miles of embedded electrical conduit in the project and there are 94 tons of rubber water seals in the dam and related items which is sufficient rubber to manufacture 3,000 automobile tires. It will take 1,120 carloads of materials or about eleven 100-car trains to furnish the equipment for the turbines and generators alone. In connection with the flowage, there will be a total of 20,100 acres of land acquired for the dam and reservoir. Of this total 17,100 acres are classified as nontillable and are used for grazing purposes; 1,600 acres are tillable; 100 acres may be classified as residential land, the remaining 1,300 acres are Government-owned lands.

The estimated project cost is $348,372,000. The annual charges are computed as $71,054,000 and the annual benefits are estimated to be $21,571,300. The benefit-cost ratio is 1.26 to 1. Of the annual benefits, about 95 percent of them are from power, 4.6 percent from navigation, 0.2 percent from irrigation, and 0.2 percent from public use. The project from the standpoint of economic analysis is primarily a power project, and as such, a large percentage of the project costs will be repaid to the Federal Treasury through the revenues derived from the sale of power. The direct costs of the powerhouse alone is more than two-thirds of the total project cost. On the basis of the foregoing, a large share of The Dalles project will be self-liquidating.

PRESENTATION—THE DALLES PROJECT, CBIAC MEETING, THE DALLES, OREG., JANUARY 24, 1952—CONSTRUCTION SCHEDULE AND HOUSING, BY HUBERT ELDER

1. In the time remaining it is desired to present the salient features of the construction schedule and to discuss the impact of the project on the area insofar as it concerns increased population, housing requirements, and related items.

2. The acute need for defense power in the Pacific Northwest power pool created the need to construct a dam located reasonably near the power load center and which featured a construction site with favorable characteristics to permit a speedy construction program. The Dalles site satisfactorily presents those desired characteristics, together with opportunity to expand economically the installed capacity of the power plant when the need develops.

3. Engineering studies indicate that the numerous and varied features comprising this project can be integrated into a construction program that would enable power output from its first power units to begin in November 1957. The first phases of construction will be in progress on the site in 2 or 3 weeks. Land acquisition is now in progress. It is essential that construction must be scheduled to fit into the time interval between now and November 1957. Such a schedule has been prepared and is currently being studied and adjusted in detail. Certain adjustments will need to be made as work progresses, brought about both by unforeseen construction conditions encountered, and by congressional action on funds appropriated each year. If annual funds appropriated by Congress for construction are not commensurate with the work scheduled for accomplishment in a given year, it naturally follows that the construction schedule will have to be adjusted accordingly.

4. For your information along with this general background, I wish to present a graphic portrayal of the principal features comprising the construction schedule. This chart is not detailed in its breakdown of interrelated items and portrays only the major construction features.

(*a*) Land acquisition is now under way and is scheduled for conclusion in June 1955.

(*b*) The powerhouse cofferdam and rough excavation for the powerhouse will begin in February this year and conclude in August 1953. Removal of this cofferdam will be accomplished in August and September of 1956. After the cofferdam is removed, the river will be diverted through eight powerhouse substructure bays.

(*c*) The powerhouse construction begins in February 1953 at the west or downstream end of the structure almost coincident with the time that the western half of the cofferdam system is completed. The bays through which the river will be diverted will be completed in time to permit cofferdam removal in August 1956 so that diversion can begin in October 1956. The structural features of the powerhouse will reach final completion in March 1958, which date is not to be confused with November 1957 when the first power units begin their energy delivery.

(*d*) Fabrication and subsequent installation of turbine units, generators, governors, gates, cranes, transformers and all powerhouse mechanical and electrical equipment will be accomplished beginning in April 1952 and concluding in October 1960. Complete generating units will be installed at the rate of one every 3 months from the time the first power is produced in November 1957, and will continue at that rate until all 14 units are in production.

(*e*) The spillway excavation and masonry construction will begin in October 1952 and finish in July 1956.

(*f*) The navigation lock, Washington shore fishways and nonoverflow dam connecting the navigation lock and spillway will all be excavated and constructed in the interval between September 1953 and July 1956.

(*g*) The gates, cranes, mechanical and electrical equipment for the aforementioned spillway, navigation lock and fishway will be constructed and installed in place beginning in October 1953 and concluding in April 1957.

(*h*) Placing of rock in the closure gap will actually begin this year when rock will be dumped into the river there as a means of disposing of rock obtained from the powerhouse and cofferdam area excavations. Rock placed in the closure area from that source will not be in sufficient volume to affect seriously the river velocities or upstream water surface elevations. Additional material will be placed in the closure area beginning in October 1956 when rock will be deposited to make the final closure and cause complete diversion. This final closure is planned for accomplishment after the river has subsided from the high water flow of 1956 and is scheduled for completion in January 1957.

(*i*) A shoofly must be constructed for the S. P. & S. Railway on the Washington shore. Since the existing railroad alinement traverses the area which will be exca-

vated to form the upstream approach to the navigation lock, it will be necessary to have the shoofly completed prior to excavating the upstream lock approach. These two construction features have then been scheduled for accomplishment in the period from August 1952 to March 1953.

(*j*) Relocation of the U. P. Railroad is intended to begin in September 1952 and be completed in March 1956.

(*k*) The S. P. & S. relocation work will be started in July 1953 and be completed in January 1956.

(*l*) United States Highway No. 30 is scheduled to be relocated beginning in September 1952 and finishing in September 1955.

(*m*) Modification of the Oregon Trunk Railroad bridge at Celilo Falls, consisting of constructing the lift span, will be initiated July 1954 and finished in June 1955.

(*n*) Access and county road revisions to accommodate them to the above relocations will dovetail with those schedules and will be constructed during 1952, 1955, and 1956.

(*o*) Telephone and power line relocations will be accomplished in 1952 and 1953.

5. Next it is appropriate and of vital local interest to outline briefly the housing requirements as best those needs can be predicted based on experience with similar construction jobs and the personnel requirements to sustain the construction as scheduled.

6. It has just been demonstrated that the construction period spans the time between 1952 and 1960. The years 1954 and 1957 will cover the peak period of construction; therefore, it naturally follows that the same years will see the peak of manpower requirements. Such data has been predicated on a basic estimate that 75 percent of the total construction force will live within the Dalles area. This then results in a projected estimate that the total construction population, including dependents, will number initially about 400 and progressively increase until in 1955 and 1956 a peak total of 6,640 is attained. After 1956 that total is expected to diminish progressively to about 460 in 1960.

7. The rise and fall of total school population will follow the above trend with the student population rising from 70 to a maximum of about 1,150 in 1955 and 1956, then diminish to about 100 in 1960.

8. Studies are currently in progress to determine the quantity and character of housing which will be required in the Dalles area to satisfy the needs of future additional residents. The Corps of Engineers and officials of the Dalles city are working cooperatively to devise a suitable and desirable means of providing the necessary housing. Similarly, cooperative efforts are being exercised in relation to expanded demands which will be imposed on schools, city sanitary facilities, electric and telephone facilities, domestic water supply, etc.

9. In conclusion, it is desired to mention that the population increase outside of the Dalles area is expected to increase by 140 in 1952 to 2,200 in 1955 and 1956, then progressively diminish to 150 in 1960. At the present time, no estimates have been made to determine the character of housing required for those people because it is anticipated they will disperse throughout various nearby communities in Washington and Oregon.

As a concluding statement I wish to state that I earnestly hope that satisfactory solution can be worked out to the housing problem since good housing and living conditions are without a doubt the greatest inducement to the recruiting and keeping of good personnel to properly man the job.

EFFECT OF BUDGET CUT, FISCAL YEAR 1953

Detroit project.—The $10,700,000 approved by the Bureau of the Budget was reduced to $10,000,000 by the House of Representatives. The $700,000 reduction will require deferments in expenditure of $152,900 on permanent buildings and grounds for Detroit project and $547,100 on powerhouse equipment for Big Cliff reregulating dam. The $152,900 was to have been used to provide permanent quarters at the site for key operating personnel for the dam and powerhouse, which are to be placed in operation for flood control in October 1952 and for power on June 1, 1953. Lack of housing will handicap seriously the recruitment of operating personnel as there is a critical housing deficiency in the area. Reduction in funds in the amount of $547,100 for the Big Cliff powerhouse will necessitate a 1-year delay in placing the 18,000-kilowatt generating unit on the line. Not only will generation be delayed at a time when it is badly needed, but also power revenue in the amount of $229,000, or more than 40 percent of the budget reduction on that item, will be lost thereby. Lack of adequate operating

personnel would be highly detrimental to proper project operation. Further, the $229,000 power revenue would represent a very high return on the timely investment of $700,000 which ultimately must be provided to complete the project.

Lookout Point project.—The $17,250,000 approved by the Bureau of the Budget was reduced to $16,000,000 by the House of Representatives. The $1,250,000 over-all reduction will require the deferment for 1 year (from December 1954 to December 1955) of the third powerhouse unit at Lookout Point Dam. The items affected will be the generator, turbine, and governor, and the manufacturer probably will claim added costs because of disruption of schedule on work now under contract. Any successful claim would increase the total project cost. Further, even though the loss will be held to the minimum practicable by completing Dexter so the first two Lookout Point units can be operated for peaking as planned, power revenue in the amount of $160,000 will be lost because of the delay. The $160,000 of power revenues would represent a very good return on the timely investment of $1,250,000 which will be required ultimately to complete the power-generating installation at Lookout Point. In addition to loss of revenue to the Federal Government, the area will be denied for a year the benefit of the additional power to be supplied by the 38,000-kilowatt unit on which completion will be delayed.

Willamette River bank protection.—The amount of $400,000 approved for this work by the Bureau of the Budget was reduced to $160,000 by the House of Representatives. The $400,000 was to have been used to provide protection at three of the most critical locations in Willamette River Basin. The $240,000 reduction will necessitate deferment of protection at two locations. The locations to be protected were areas where erosion at stages even below bankfull is removing high banks which severe during floods as natural dikes to reduce the overbank flow across adjacent rich agricultural lands. These areas are heavily populated and highly productive and the additional damages without protection will be reflected in a considerable loss of production and income for the communities involved. Further, because of the continuing erosion, the total amount and cost of work required for protection will be increased if the work is not done before the next flood season.

Advanced planning funds.—The House of Representatives eliminated all advanced planning funds for Hills Creek and included no planning funds for Green Peter and Cougar. The amounts needed $50,000 each for Green Peter and Cougar and $125,000 for Hills Creek, were very minor, but the effect on prosecution of the Willamette Basin project will be of considerable consequence. Lookout Point Dam is scheduled for initial operation on an interim basis in 1954 and a start has been made on planning for Hills Creek Dam with a view to completion of construction in 1958. If planning on Hills Creek is not continued, full coordinated control and development of the Middle Fork cannot be achieved, and the full benefit from the investment in Lookout Point cannot be realized. At present, reduction of flood stages is to be provided on Mddle Fork, Willamette, and North Santiam Rivers but none can be provided on McKenzie and South Santiam Rivers until advanced planning is completed. When stages are reduced on Middle Fork, Willamette River by operation of Lookout Point, severe interim damages may be occasioned by overflow from McKenzie River, across the rich and highly developed delta near Springfield, until flood stages on McKenzie River can be reduced by storage at Cougar Dam. The same interim conditions will prevail, but to a lesser degree, at the confluence of North and South Santiam Rivers. Further, inasmuch as McKenzie and South Santiam Rivers are two of the four major flood-producing streams in Willamette River Basin, lack of control on those streams will result in continuation of serious but preventable damages, not only on those streams but along the entire length of Willamette River.

Construction of storage projects now under way will be completed in 1954. No new work can be undertaken until the necessary advanced planning has been completed. It is therefore essential that the minor cuts for not only Hills Creek but also Green Peter and Cougar projects be restored.

Governor McKAY. I happen to be an economy-minded Governor. I had to spend hours and days picking up dimes and dollars and hundreds of dollars out of our budget so that we may live within our means, as I have done personally in my business life.

But sometimes we are faced with a situation where it is not economy to cut things out. This is one case where I think it is false economy

to cut out the appropriations asked for in the budget, because here are nine dams in course of construction as to which, if the appropriations are not made, there will be a cutting down of the power available, which might result in a very serious impediment of the industrial development of the Northwest.

Chairman McKellar. May I interrupt you for just a moment?

Governor McKay. Yes, sir.

HOUSE CUT

Chairman McKellar. While I am in favor of these projects and voted for every one of them, I am just wondering—I am trying to be a practical man—I am just wondering what would be the smallest amount that you could get along with for this year. The total request is in the amount of $169,850,000, and the House cut from that the amount of $66,350,000.

Governor McKay. I think the Army engineers are much more competent than I to say what the very least is that they can get along with.

Here is one thing that I want to point out: $4,000,000 has been appropriated for The Dalles, and the work has been started. The request of $37,000,000 has been cut out. That will mean, in addition to the loss of power, many millions of dollars of losses right now. The contractors are already out on this job. The people are building housing facilities and so on. Private enterprise is doing that. The contractors are there now. If there is no money appropriated, the Army engineers will have to pay the contractors off.

Senator Cain. What project are you referring to, Governor?

Governor McKay. I am referring to The Dalles, Senator.

Then, when they come back and start the project again in a few years from now, they will have to pay additional millions. You cannot move these contractors on and off the job without spending up in the millions of dollars. That is a terrific job.

One other thing: I say that it is false economy to cut this project out entirely.

I ask you to refer to the Army engineers for the answer to how much of a cut they can take, and not curtail the production of power.

Take a dam like the Detroit Dam, which is a $61,000,000 project. All of these are multiple-purpose projects. Private enterprise could not build that dam at $61,000,000 to produce 100,000 kilowatts of power. The reason it is possible is because there are advantages for navigation, irrigation, stream purification, and recreation, if you please.

If the appropriation for that project were cut down a limited amount, it might mean a delay of a year in bringing in the first power.

GENERATOR BREAKDOWN AT GRAND COULEE

Now, here is another thing that was mentioned by Mr. Erdahl. He referred to the breakdown at Frand Coulee.

I want to call attention to the fact that it was only 7 of 18 generators that were out on that occasion. Having these generators out was so serious that the Northwest Power Pool had to go on the radio and urge

housewives not to cook on their electric stoves between the hours of 4 and 6 o'clock. We were operating on a very close margin.

Another thing I want to mention is that I am very proud to be here today. This is the first time that I have ever appeared before a Senate committee when there wan't a controversy with myself on one side and somebody else on the other. I don't mind quarreling, or being in fights, if they are honest fights, but I am very happy to be here today when all of our people are united on this program. The private power utilities, the Bonneville Power Administration, and the governors of the three Northwest States are united on these seven dams that have been authorized, and for which money has been appropriated. We say that it would be false economy to stop them at this time.

I think I would be wasting your time to talk any longer, unless you want to ask me some questions.

Chairman McKellar. I agree with you that it would cost the Government a large amount of money to discontinue that work, even for 1 year, and it would be an irrevocable loss.

We are certainly very grateful for having you gentlemen here to tell us your views. All of the witnesses thus far have done splendidly, in my judgment.

Governor McKay. It has been a pleasure to be here, Senator McKellar.

COST OF CONTRACT SETTLEMENT

Governor Langlie. Senator McKellar, I would like to say, in connection with The Dalles appropriation, that if the request is eliminated that there will have to be a contract settlement with the contractors of over $1,200,000, which will just be paying for nothing. That, to me, would be a glaring indictment of Congress and all public officials, when we set up a program and then fail to follow through on it. That is one of the dangerous things about this. I can't see how we can start these things, with the power deficit what it is, and then not go through with the program with the maximum speed that can be developed.

Now, if anyone from an engineering standpoint can point out where one of these agencies can save some money on their requests, then that is all right. But, on the basis of failing to do that, just to arbitrarily cut them down, certainly that is something that would be subject to the severest criticism.

Chairman McKellar. I think it would subject the Government to great loss.

I do not want to see the Government's interests sacrificed. That is the way I feel about it.

Go ahead, gentlemen. Governor, have you anything further you wish to say?

Governor McKay. I have finished my statement, sir.

Chairman McKellar. Have you finished, Governor Langlie?

Governor Langlie. Yes, sir.

Chairman McKellar. Have you any questions, Senator Hayden?

Senator Hayden. I have no questions. I just wanted to inquire about the proceedings. Are you planning to recess soon and go on again later this afternoon? The reason I ask that is because I have one gentleman from Yuma, Ariz., who would like to have about 3 or 4 minutes to present a statement he wishes to make. It is on a flood-

control project. He will be glad to come in at any time you can hear him. Would you like to make that this afternoon?

Senator CAIN. Is it the intention of the chairman to remain in session until all of the Pacific Northwest Utilities Conference Committee representatives have been heard, sir?

Chairman MCKELLAR. Yes.

Mr. ERDAHL. I believe we can finish in 15 or 20 minutes.

Chairman MCKELLAR. You may proceed, Mr. Erdahl.

Mr. ERDAHL. I would like now to call the balance of our witnesses, Senator.

Mr. Chairman and members of the committee, I want for the record to first say that as chairman of this committee we are very complimented to have had both Governor Langlie, of Washington, and Governor McKay, of Oregon, back here with us, and joining with us in what we feel is a very important job in Washington, D. C. I think it is a compliment, and it is very gratifying to me, representing the committee, to find that we can get close enough together in our problems at home; that the Governors of our two States can come back and join in, and that we can leave our partisan politics and our ideological differences at home when we come back here, to tell you what our problem is in the Northwest.

I want to formally thank Governors McKay and Langlie for appearing before your committee.

Senator CAIN. Can you not find a way to get to settle such differences away from home as well as away from here? It would be very helpful.

Mr. ERDAHL. I might say, Senator, that we have a difficult enough time at home. I don't know when to call, because some of our neighbors are on daylight-saving time, while we are on standard time. Business went on summer time, and the employees want to go on some other time. So, I am afraid to call home. I don't know whether my wife will be asleep or awake. In Tacoma we quit carrying watches. We now carry calendars, and we are lucky if we know what day of the month it is, let alone the time. So, there is some confusion up there, Mr. Senator.

Now, the next witness I would like to call in is Mr. Allan A. Smith, who is counsel for the Mountain States Power Co. and the Pacific Power & Light Co.

Chairman MCKELLAR. Will you come forward, sir?

STATEMENT OF ALLAN A. SMITH, COUNSEL. MOUNTAIN STATES POWER CO. AND PACIFIC POWER & LIGHT CO.

SCHEDULE OF POWER CAPACITY IN NORTHWEST

Mr. SMITH. Mr. Chairman and members of the committee, I have a prepared statement, which I will file for the record.

In view of the anxiety of the committee to complete the sessions and the fact that Mr. Erdahl's presentation, with the rather extensive examination by Senator Cain, has pretty much covered the matters that are included in my paper, I will simply say that in round num-

bers, we have a stake of approximately 2,000,000 kilowatts in this program for the next 5-year period, and any action on the part of the Congress that will take those projects off schedule means taking away from us for the particular period that they are off schedule the amount of power that we absolutely need in the area.

CONSTRUCTION OF PROJECTS

Now, I don't think I need to dwell on what the needs are. It seems to me that that has been very fully covered. You have before you the amount of money that is involved, the amount that was requested by the Army engineers, and approved by the Budget Bureau, and the amount that was actually appropriated by the House. It is our own judgment that those appropriations should be placed back in the amount that was recommended by the Bureau of the Budget. The program will then go forward and we will have this amount of power available.

I ought to say this: That this refers to only the projects that are now under construction, and only takes care of the needs for normal growth. No large industries, or anything of that sort are included in the estimates that have been presented to this committee. We just need that for the day-to-day growth of the business that is going on out there, and the new people that are coming into the area.

So you can see how serious the situation is. The figures are presented, of course, on the basis of what we call adverse water, the worst water year that has been known in the history of the country. As water conditions improve, of course, that condition improves; but improved water ameliorates but does not cure, so that we need these projects out there in the Northwest.

The Government has undertaken to build them, and it would seem to us to be good sense for the Government to go ahead and complete them and get kilowatts on the line and into industry and homes, just as quickly as it can be done. That is money in the pockets of the Federal Government. It is in the interests of the Northwest. It is in the interests of the whole Nation.

Thank you very much.

Chairman McKellar. I would like to ask one question before you go.

Mr. Smith. Yes, indeed.

OPPOSITION TO THE DALLES DAM

Chairman McKellar. Do you know who the people are who are opposed to the building of The Dalles?

Mr. Smith. The only thing that I know about, Senator, is that I think there are some people here who are perhaps better prepared to speak on that particular problem than I am.

Some question has been raised of some treaty rights with the Indians.

Chairman McKellar. Yes, sir; all right.

Senator Cain. May I ask one more question, sir?

Mr. Smith, I did not quite understand one statement you made. I understood you to say that we had a stake of some 2,000,000 kilowatts in this program. What was the reference to, sir?

Mr. SMITH. Mr. Senator, I have been before this committee on a number of occasions before. I happen to represent private power companies. I wasn't speaking of them. I was speaking of the entire Northwest area, which was described by Mr. Erdahl, composed of Washington, Oregon, and northern Idaho.

Senator CAIN. Thank you.

Chairman MCKELLAR. We are very much obliged to you, Mr. Smith. Your statement will appear in the record at this point.

(The statement referred to follows:)

STATEMENT BY ALLAN A. SMITH, COUNSEL FOR PACIFIC POWER & LIGHT CO., MOUNTAIN STATES POWER CO.

My name is Allan Smith. I am a lawyer, a partner in the firm of Laing Gray & Smith, 1504 Public Service Building, Portland, Oreg. I am a part of the group of utilities from the Northwest captained by Mr. Erdahl to urge committee and congressional support of appropriations for the construction of the multipurpose projects discussed by him. Further identifying myself, my firm is general counsel for two private power companies—Pacific Power & Light Co., also represented here by D. R. McClung, vice president, and Mountain States Power Co. On behalf of those companies and as a member of the group, I endorse the presentation made by Mr. Erdahl. If I may, I want to supplement his presentation to emphasize the need for the Federal Government to complete the task it has taken to itself in meeting the power requirements of our region.

The area has carried a heavy load devoted to the war effort. This load is throughout the area and not confined to Government facilities. Some of it has been imposed by Government orders. This, together with normal growth, leaves us confronted with serious deficiencies and brown-outs with curtailment are a constant threat. Because so much energy is used in war effort, there is a special responsibility resting on the Government to carry on and expedite the completion of the projects now being built. Most certainly they should not be hamstrung by a failure to appropriate sufficient funds to carry on.

May I add to Mr. Erdahl's comments some information that will point up how serious our situation really is?

The survey made by the pool, referred to by Mr. Erdahl, includes estimates of the power requirements of our region for a 10-year period. The estimates for the 5 years from June 1, 1953, to June 30, 1958, inclusive, will suffice to make my point.

While the load growth in our area in the last 10 years has ranged from 8 to 30 percent, and in the past year was actually 10 percent, the average of the estimates made by the pool for the 5-year period is about 9 percent. This is a little unbalanced because the percentage for 1953 is 16 percent and for 1954, 11.2 percent due to some heavy load plants coming on the line, in those years. For the years 1956 and 1957, the percentage is 5.6 percent, and for the remainder of the period below that. These estimates assume normal load growth, plus only the heavy industry loads coming on in 1953 and 1954, and cover such uses as domestic, commercial, agricultural, and increases from growth in population, and emphasize the conservative appraisal of this phase of our critical power problem.

Based on these estimates Mr. Erdahl has told you of our prospective deficiencies for the next 5-year period. Let's tie his statement to what happens if the Federal program doesn't go on.

Scheduled production at McNary in 1953 is 161,000 kilowatts, in 1954—322,000 kilowatts, and a like amount in each of the years 1955 and 1956, and at Chief Joseph is 294,000 kilowatts in 1955, and a like amount in the years 1956 and 1957. The Dalles is scheduled to come into production in 1957 in the amount of 179,000 kilowatts.

The construction of all these projects must be kept on schedule or the deficiency in peaking capacity for 1953 will be increased to 1,130,000 kilowatts, for 1954 to 887,000 kilowatts, for 1955 to 867,000 kilowatts, for 1956 to 614,000 kilowatts and in 1957 to 519,000 kilowatts. These respective deficiencies spelled out in years, will carry over from year to year to the extent that construction is delayed

or stopped altogether. Our stake in the Federal development for the 5-year period is the astounding total of 2,217,000 kilowatts, or approximately 50 percent of our present load of 4,100,000 kilowatts.

Of course, as water conditions improve, the amount of power from the hydroelectric facilities increases. Even under median water conditions, with adherence to schedule, we will not have a surplus until 1954–55, while under adverse conditions, which is the hazard against which we must guard, the balance between load and capability will not be reached until 1958–59. This again depends on the maintenance of existing schedules. Improved water ameliorates, but does not cure. The threat of brown-outs and load curtailment is constant throughout the period.

The Corps of Engineers requested, and the Bureau of the Budget approved, an appropriation of $66,000,000 for McNary for fiscal year 1953. This was cut $6,000,000. It is estimated that this will delay the time when power will be available from this project at least 6 months.

A request for $16,000,000 was made for Chief Joseph, which was reduced to $11,500,000—a cut of $4,500,000. This may not be so serious, but will complicate planning and scheduling of the work.

A request of $8,100,000 was made for Albeni Falls, which was reduced to $6,000,000. This will insure storage, but delay generating facilities at the dam.

A request of $37,500,000 was made for the Dalles. This was eliminated in its entirety.

I mention these only because they are the projects upon which construction has been started. No new starts are included. They point up the tight schedule which must be maintained and the disastrous results of such violent cuts in appropriations.

Carrying along this program, according to schedule, provides no surplus in the area, and leaves no power for new industry of large energy requirements. There are no reserves for breakdowns and none to replace loss of capability because of flood conditions in the Columbia Basin. It is estimated that floods can reduce production at Grand Coulee and Bonneville as much as 400,000 kilowatts.

The Government has started construction of the projects to which I have referred. There is a ready market in the area for every kilowatt-hour that will be produced, and the cost of construction properly allocated to power will be repaid to the Government with interest. It is hard-headed good business for the Government to carry out its part of the program.

We are not idle. The Pacific Co., one of the companies which I have the privilege to represent, is engaged in the construction of a project that will add 123,000 kilowatts to the resources of the area. Washington Water Power is adding 230,000 kilowatts at Cabinet Gorge, the city of Seattle 310,000 kilowatts at Ross, the Chelan PUD 150,000 kilowatts at Rock Island. The proposed Cowlitz River development by the city of Tacoma will add 460,000 kilowatts, Pelton by Portland General Electric 120,000 kilowatts, and Box Canyon by Pend Oreille PUD 69,000 kilowatts. We are not looking to the Federal Government to supplant local enterprise, but its activities on the Columbia River make it an interested party in our development, and it must meet the responsibility of an interested party.

We are not in complete harmony with all that has been done by the Federal Government, or the manner in which it has met its responsibilities. In the face of some grave differences we have made much headway. Mutual concessions in contractual negotiations for supplying the private companies have resulted in 5-year contracts with each of the five private companies, with reasonable provisions for extensions. However, we unreservedly urge upon this committee that the appropriations I have mentioned be restored to the budgeted amount in order that construction may go ahead on schedule and the distributors in our area know how to plan in meeting the power needs of the region. The alternative, and the only one, would be to plan for curtailment of load.

I am sure this committee must be impressed as this group has come before it each year since 1947 in support of the general program of building up our hydroelectric resources. You already know that it is made up of all the distributors in the area—municipalities, public utility districts, private companies, and cooperatives. Probably, our ideological differences are no less sharp than elsewhere, but they have been subordinated to a common recognition of the necessity to keep our generation and transmission in step with load growth. We have our disagreements, but they have not prevented a realistic appraisal of the needs of the area and a concerted effort to meet them. More important, however, there has grown out of this cooperative effort the united support of a pool operation already

described. We generate to the full capacity of our facilities and turn the product into a common pool from which each may draw according to his needs. It's like a great reservoir, with each distributor in control of a spigot which may be turned on whenever his needs require. It is as simple as that in the principle of its operations; but to keep the necessary records of power deliveries and charges as well as to keep the pool filled requires an expert understanding of geographical and climatic conditions and meticulous adherence to technical engineering practices and the most painstaking accounting procedures. It has already been described as the most outstanding coordinated and cooperative effort in the country. I believe that. But to keep it going, we must have the resources upon which to draw to keep the pool filled. You must have been persuaded by now of the part the Government must play to keep the pool full. In the spirit of such cooperation and coordination we join in support of the program outlined by Mr. Erdahl.

STATEMENT OF D. R. McCLUNG, VICE PRESIDENT, PACIFIC POWER & LIGHT CO.

COMPLETION OF NORTHWEST MULTI-PURPOSE PROJECTS

Chairman McKELLAR. Will you call your next witness, Mr. Erdahl?

Mr. ERDAHL. I would like to call next Mr. D. R. McClung, who is vice president of the Pacific Power & Light Co.

Chairman McKELLAR. All right, sir, will you come forward, please?

Mr. McCLUNG. Mr. Chairman and gentlemen, I too shall be pleased to submit my comments for the record, without repeating what has been said.

Chairman McKELLAR. Without objection, that will be done.

(The statement referred to follows:)

STATEMENT BY D. R. McCLUNG, VICE PRESIDENT, PACIFIC POWER & LIGHT CO.

My name is D. R. McClung. I am a vice president of Pacific Power & Light Co., with headquarters in Portland, Oreg.

Pacific Co. supplies electric service within an area of 8,600 square miles in the Columbia River Basin. The company's service area extends from the mouth of that river and into south central Washington and northern Oregon. It had a 1950 population of 750,000, up 30 percent in 10 years. Electric customers total over 146,000.

Use of electricity in the company's service area has increased 65 percent in the last 5 years. No industrial loads of appreciable size contributed to this growth, but rather a steady increase in use by all classes of consumers. Average annual consumption per residential customer has increased from 3,161 kilowatt hours during 1946 to 4,983 kilowatt hours during 1951, typical of area load growth. Average use has increased steadily and we expect it to continue, barring unforeseeable conditions.

The members of this group are very conscious of their responsibilities. Pacific Co. is doing its part in building new power sources by construction of a 108,000 kilowatt hydroelectric plant on the Lewis River in southwest Washington. This plant, started in the early spring of 1951, is due for completion late in 1952.

The company, with certain other private utilities, has contracts with Bonneville Power Administration for purchase of firm power as it becomes available from Federal developments. These contracts are for an initial as well as minimum period of 5 years and are subject to annual extension at least 3 years in advance of the current expiration date. Pacific Co. expects to continue to secure most of its purchased power requirements from the Federal Government if power is available from that source. Unfortunately, there are no prospects for purchasing full firm power requirements for several years, and these prospects become even more remote if completion of authorized multipurpose projects is further delayed.

Capacity for serving new industries of any magnitude does not exist, nor is it likely to be available for several years, even if the Federal construction program does not slip again. Industires now being supplied are subject to the hazards of curtailment each year, the extent depending upon vagaries of the weather, which fortunately for several years has been generally favorable.

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The area will have no reserves for machine breakdowns or transmission outages. It is only by the most vigilant type of a maintenance-and-repair program conducted jointly by members of the Northwest Power Pool that serious prolonged outages have been prevented during the critical seasons.

An already serious situation would be greatly aggravated by reductions in appropriations proposed by the House for multipurpose projects now under construction on the Columbia River. Obviously the Federal Government is committed to complete these projects. Where it is physically possible, each should be expedited rather than to stretch out construction because of the present dismal outlook for an adequate power supply in the region. There is no problem about creating a market for the power. It now exists in the area. It would seem to be good business to at least keep on schedule.

We therefore concur emphatically with Mr. Erdahl's statement and respectfully urge that appropriations be granted so that construction of Federal projects can be continued on schedule.

Thank you very much for your attention and for the opportunity of appearing before the committee.

ACUTE POWER NEED

Mr. McCLUNG. I want to support Mr. Smith in what he has said, that is, that the area is in desperate need for power. The revenue exists if the Government will go ahead and fulfill its responsibilities, in the completion of these Columbia River plants, already under construction. There isn't any question about promotion out there. The business exists and the revenues are there to pay off the investment already incurred.

I also want to endorse very strongly what Mr. Erdahl has said. If there are any questions, I will be glad to answer them.

Senator CAIN. Is it not a fair thing to say that you in your official capacity were one of the codesigners of, and approved of the statement offered in the name of the Pacific Northwest Conference Committee by Mr. Erdahl?

Mr. McCLUNG. That is correct, Senator Cain.

Chairman McKELLAR. Are there any further questions, gentlemen? If not, we are very much obliged to you.

Mr. ERDAHL. Thank you, Mr. McClung.

Our next witness is Mr. R. F. Plymire, who is general commercial manager of the Puget Sound Power & Light Co.

STATEMENT OF R. F. PLYMIRE, GENERAL COMMERCIAL MANAGER, PUGET SOUND POWER & LIGHT CO.

NORTHWEST POWER SUPPLY

Mr. PLYMIRE. Mr. Chairman, I have a prepared statement here which wholeheartedly supports the statement made by our chairman, Mr. Erdahl.

In order to save the committee's time, I would like to have permission to file this statement for the record.

Chairman McKELLAR. Without objection, that will be done.

(The statement referred to follows:)

STATEMENT BY R. F. PLYMIRE, GENERAL COMMERCIAL MANAGER FOR PUGET SOUND POWER & LIGHT CO.

My name is R. F. Plymire. I represent the Puget Sound Power & Light Co., a privately owned electric utility company with principal headquarters at Seattle, Wash. My company is engaged in the business of generating, transmitting and distributing of electric energy in the western or Puget Sound section of the State

of Washington, having an estimated population of about 500,000. Service is furnished at retail to about 165,000 customers, among which are a substantial number connected directly with the national defense effort. Included among the defense customers are those engaged in aircraft manufacturing, shipbuilding, chemical production, and metalworking, as well as those strictly in the military category—airfields, military posts, and Armed Forces installations of various kinds.

In common with the other utilities represented here today we have been members of the western group of the Northwest power pool and the Pacific Northwest Utilities Conference Committee since their organization several years ago under the then prevailing power supply circumstances which called for adoption of emergency measures. As Mr. Erdahl has outlined in his statement on behalf of the conference committee, the serious circumstances then existing still prevail today and from present indications will continue for years in the future unless corrective measures are forthrightly taken by the Federal Government. The purposes of the pool operation and the objectives of the conference committee are the same today as they were from the beginning; namely, to gain the last effective kilowatt from existing power supply resources for dedication to useful purposes in the area.

As is the case with the other public and private utilities represented here today, my company is dependent on the Federal system for a substantial part of its power-supply requirements for distribution to its civilian and defense customers. We concur wholeheartedly with the conference committee statement just presented by Mr. Erdahl and believe the estimates of future power needs of the area contained therein are entirely realistic on the basis of presently known facts. We believe, further, that this statement accurately gives your committee a picture, grim as it is, of the long-term precarious power situation in which the Pacific Northwest area finds itself for the reasons outlined.

We would like to respectfully urge that your committee and the Senate give favorable consideration, in particular, to the restoration of the funds necessary to keep the construction of existing Federal projects in the area on schedule, according to recommendations of the United States Army engineers. We believe this to be a sound and justifiable program in the best interests of the Pacific Northwest and the Nation as a whole.

Our thanks are extended to your committee for your kind consideration in permitting us to present our case.

NORTHWEST POWER SUPPLY AFFECTED BY HOUSE CUT

Senator CAIN. May I ask whether you appeared before the House committee, Mr. Plymire?

Mr. PLYMIRE. Yes, sir, Senator Cain.

Senator CAIN. To what do you credit the action taken by the House in cutting so substantially the appropriations requested?

Mr. PLYMIRE. Well, I personally think, Senator, that the House failed, for some reason or another, to get a full appreciation of the power-supply problem in our area.

Senator CAIN. Without any intended disrespect of any kind, did you as a witness feel that you were as fully heard by the House committee, which necessarily has many activities to undertake, as you have been heard this morning by this committee?

Mr. PLYMIRE. We were given a much shorter time, Senator.

Senator CAIN. Thank you.

Chairman MCKELLAR. One moment. Perhaps that had better go off the record.

Senator CAIN. I said "without any intended disrespect" at all. I think the basic point that the gentleman made was that he had been hopeful in the House of having a larger opportunity in which to present these points of view made available to us.

Mr. PLYMIRE. That is correct. No disrespect was intended by my answer, either.

Senator CAIN. I appreciate that fully.

Chairman McKellar. Very well. Will you call your next witness?

Mr. Erdahl. Thank you, Mr. Plymire.

Next I would like to call Mr. Frank M. Warren, executive vice president of the Portland General Electric Co.

Chairman McKellar. All right, sir. Come forward, please.

STATEMENT OF FRANK M. WARREN, JR., EXECUTIVE VICE PRESIDENT, PORTLAND GENERAL ELECTRIC CO.

DESCHUTES RIVER PROJECTS, OREGON

Mr. Warren. Mr. Chairman and members of the committee, I have a prepared statement which I would like to read for the record.

Chairman McKellar. Go right ahead, sir.

Mr. Warren. Portland General Electric Co. wishes to introduce this statement into the record of the hearing for the purpose of emphasizing our concurrence with the general statement made by Mr. C. A. Erdahl, chairman of the Pacific Northwest Utilities Conference Committee.

We are one of the major distributing utilities among those which comprise the Conference Committee's membership and, I believe, can fairly represent the interests of a very large segment of the consumers of electricity in the State of Oregon in describing their particular need for an augmented electric-power supply. Their particular need is, of course, one with that of the whole Pacific Northwest region.

More than 200,000 consumers are served over the lines of Portland General Electric Co., which operates in the most heavily populated and commercially developed portions of Oregon in the lower Willamette Valley. This particular area has grown apace with others of the Northwest, and the needs of its people for a more ample power supply certainly is as great as those of any other area. Our own company has substantial plans as well as construction work in progress which, when carried out, will go far toward relieving the critical shortage of power within the PGE service territory. Over the next 5 years, projects under way and those awaiting final clearances of licensing agencies will require an expenditure on our part of $100,000,000.

INSTALLED POWER CAPACITY

However, this construction program—it includes the Pelton and Round Butte projects on the Deschutes River in central Oregon with an installed capacity of at least 345,000 kilowatts—will not render our operation a self-sufficient one generationwise, and our customers will continue to have a substantial and growing need for power produced from Federal projects. Furthermore, our own projects, like some others prosecuted by non-Federal utilities, have met with delays due to the pull and haul of local economic interests which unfortunately are in conflict. We have every hope that these conflicts soon can be resolved as they apply to our own projects, through the functioning of the local democratic processes established for the purpose.

Our customers are in real and growing need for the power that will come from them. This need is immediate, and anything which can be done to speed the time when additional blocks of federally pro-

duced energy can be brought on the line is to our mind justified not only on the basis of normal, peacetime requirements but imperative if our area is to make the contribution it should to the national-defense effort.

While on the subject of our own customers' requirements for federally produced power, I should like to remark that we have been gratified by the improved contractural relationship between our company and the Bonneville Power Administration in the last year, exemplified by the 5-year contracts entered into between that Federal Power Marketing Agency and State-regulated power distributors in the western group of the Northwest power pool. While these contracts, from our own and our customers' standpoint are not all that could be desired, they nevertheless can be regarded as a constructive forward step toward removing some of the discriminations which formerly existed. We are looking forward to further steps in the same direction and I would like to emphasize to this subcommittee that we expect the Federal Government to recognize in time its full responsibilities to the many thousands of home, farm, commercial, and industrial consumers served over the lines of Portland General Electric Co. We have been one of the largest distributors of federally produced power in the Northwest for more than a decade, and for that reason our customers are substantially dependent upon Federal projects for power.

In closing this statement I strongly recommend as a minimum action of the Senate that it restore fully all appropriations for projects under construction by the Engineer Corps so that existing schedules of generator installations can be maintained. These appropriations would include those for The Dalles, Albeni Falls, and Chief Joseph Dams, and for two of the Willamette Valley flood-control projects—Big Cliff and Lookout Point—all of which can add vitally needed electric power to our regional supply.

Thank you for this opportunity to express our views.

Mr. WARREN. I just wish to endorse the testimony of Mr. Erdahl and of the previous witnesses and subject myself to questioning, if any of the Senators have any questions.

Chairman MCKELLAR. Are there any questions?

Senator CAIN. I well remember what the gentleman said a year ago. I think he is prepared to support it even more vehemently 12 months later.

Mr. WARREN. That is correct, Senator.

Chairman MCKELLAR. All right, sir, we are very much obliged to you.

Mr. ERDAHL. Thank you, Mr. Warren.

Our next witness is Mr. Ralph H. Millsap, vice president of the Portland General Electric Co.

Mr. MILLSAP. I have no statement to make.

Mr. ERDAHL. Our next witness, then, is Mr. Owen W. Hurd, who is president of the Northwest Public Power Association.

STATEMENT OF OWEN W. HURD, PRESIDENT, NORTHWEST PUBLIC POWER ASSOCIATION

STUDY OF POWER GENERATOR INSTALLATIONS

Mr. HURD. Mr. Chairman, I would like to submit a prepared statement for the record.

Chairman MCCARRAN. Without objection, that may be done.

(The statement referred to follows:)

STATEMENT OF OWEN W. HURD, PRESIDENT, NORTHWEST PUBLIC POWER ASSOCIATION, IN SUPPORT OF APPROPRIATIONS REQUESTED FOR UNITED STATES ARMY ENGINEERS' PROJECTS NOW UNDER CONSTRUCTION IN THE PACIFIC NORTHWEST AND $5,000,000. TO START CONSTRUCTION OF ICE-HARBOR DAM ON THE SNAKE RIVER DURING FISCAL YEAR 1953.

My name is Owen W. Hurd. I am president of the Northwest Public Power Association representing 81 publicly owned electric systems in the States of Oregon, Washington, Idaho, and Montana. Our membership includes 20 municipals, 39 public-utility districts, and 22 cooperatives, which, together with other publicly owned systems, serve some 2,000,000 persons—or about 39 percent of the region's population.

I am also manager of the Benton County Public Utility District, the county in Washington in which the Atomic Energy Commission's Hanford project is located.

Our association is made up of operating utilities and exists for the purpose of improving the efficiency of public operations and the solution of everyday operating problems. Although our budget is very modest, we are happy to join with other members of the Northwest Utilities Conference in appearing before this committee in behalf of the future power supply of the Northwest. We consider the delays which have occurred in the Federal power program to be the most serious problem facing both public and private power in our region. We would be negligent of our utility responsibility if we would not do everything possible to provide our customers with an adequate supply of electric power.

The comprehensive study made by the operating committee of the West group of the Northwest power pool for the Federal Power Commission, based upon the present schedules of generator installations by all power agencies in the Northwest, and assumed minimum stream-flow conditions, indicates deficiencies of resources when compared to loads for every year from the present time until 1962, the period covered by the report, with the exception of 1958–59. These deficiencies vary from a maximum of over 900,000 kilowatts to a surplus of 95,000 kilowatts. It is felt by many utility operators that the load estimates used, which contained no new large industrial or defense loads, are on the conservative side and that the schedule of generator installation may be on the optimistic side due to the fact that the resources include projects which may be delayed because of opposition.

In view of the power shortage which exists today, and will continue for the foreseeable future, we urge that the necessary appropriations be made for all Army engineers' installations and completed in the shortest possible time.

We also wish to urge the appropriation of funds in the amount of $5,000,000 recommended by the Bureau of the Budget for the start of construction of the Ice Harbor Dam in fiscal 1953. It is extremely important that this dam, which was authorized in 1945, be started without further delay in view of the need for approximately 400,000 kilowatts of new capacity each year in addition to those now under construction. The location of Ice Harbor Dam, with respect to the Atomic Energy Commission's Hanford project and its strategic location with respect to the load center of the power deficient southeastern Washington and northeastern Oregon area, makes it a logical new power source which would reduce transmission losses as well as provide important navigation and irrigation benefits. No other authorized Federal plant can be substituted for this project without loss of benefits and increased delays.

All of the projects now under construction by the Army engineers, and Ice Harbor Dam, are needed to meet the power supply requirements of the region. Only by keeping these projects on present or improved schedules can the demand for power for defense and other purposes be met.

It is hard for us to reconcile the logic of spending money to finance power projects in foreign countries and, at the same time, deny the necessary funds for the construction of self-liquidating projects at home which will create new wealth, broaden the tax base, and contribute to the economic and military strength of our Nation.

In conclusion I would like to remind you that through the purchase of power the people of our region will repay the Federal Treasury the entire cost of these power projects with interest. Thus they not only make an essential contribution to our national defense, the economic welfare of the region and the Nation, and preserve those power resources for the maximum benefit of the people, but they also constitute a sound business investment.

The people of the Northwest are looking to Congress to meet what I regard as both a challenge and an opportunity. The challenge is to do away with the immediate power shortage. The opportunity for the long range is in the making of sound-business investments on a self-liquidating basis which will not only be repaid, with interest, to the United States Treasury, but will become the energy base for new jobs, an expanded tax base, and a better life for our people.

RESTORATION OF FUNDS AND START OF ICE HARBOR PROJECT

Mr. HURD. As president of the Northwest Public Power Association, which represents some 81 public agencies in the Northwest; and which serves some 2,000,000 people, approximately 39 percent of the region's population, we concur, this association concurs, in the statements that have been made, including those requesting the restoration of funds for the dams under construction and for the start of Ice Harbor.

Senator CAIN. May I ask in what States your members are located?

Mr. HURD. Our members are located in the States of Oregon, Washington, Idaho, and Montana.

Senator CAIN. Mr. Hurd, during the course of Mr. Erdahl's testimony, he commented at considerable length on the effectiveness and the full measure of cooperation which entered into, in 1940, the establishment of the Northwest power pool. Do you share as strongly as does he, a full sense of approval of the thought that that is a truly effective agency, as it includes both public and private interests throughout the Pacific Northwest?

Mr. HURD. Yes, I do, Senator.

Chairman MCKELLAR. Let me ask you this question, as to the rates. Are the rates substantially the same in the area?

Mr. HURD. Our rates for each utility, of course, are set by their own financial requirements. They are uniformly low but not identical in every case.

Senator CAIN. I have one other question, if you please. It is not to Mr. Hurd, the person, for I do not know him very well, but to his official capacity, to which I make reference by emphasizing again the uniqueness of this gathering, which includes so many strong supporters of public power and private power. Mr. Hurd is a living demonstration of the ability of such forces to work in harmony in the Pacific Northwest, and through their relationships with the Congress of the United States.

Mr. HURD. We are very happy to do so, sir.

Senator CAIN. Thank you, sir.

Chairman MCKELLAR. Will you call your next witness?

Mr. ERDAHL. Thank you, Mr. Hurd.

Our next witness is Mr. Bob Jones, who is a councilman of Seattle, and chairman of city utilities, Seattle, appearing on behalf of Seattle City Light.

STATEMENT OF BOB JONES, MEMBER OF SEATTLE CITY COUNCIL, CHAIRMAN OF UTILITIES COMMITTEE, CITY OF SEATTLE, WASH.

SCHEDULE OF POWER GENERATOR INSTALLATIONS IN NORTHWEST

Mr. JONES. Mr. Chairman and gentlemen of the committee, I would also like to place my statement in the record.

Chairman MCKELLAR. Without objection, that will be done.

(The statement referred to follows:)

STATEMENT OF BOB JONES, MEMBER OF SEATTLE CITY COUNCIL, CHAIRMAN OF UTILITIES COMMITTEE, CITY OF SEATTLE, WASH.

I am a representative of the city of Seattle, Wash., which owns and operates the second largest municipally owned electric utility in the United States and is a participating utility member of the Northwest Power Pool.

My purpose in appearing here is to respectfully urge that your Committee recommend and approve the restoration of appropriations requested in order to maintain on the present schedule the various power production projects now in progress on the Columbia River and its tributaries. The present construction schedule of Federal projects of the Columbia River development is barely sufficient to supply the minimum power requirement of the area. Local public and private electric utilities in the area are building all of the power projects that they can in order to alleviate the shortage of generating facilities. Some of these projects have been delayed for several years by conflicting interests.

Normal load growth, similar to that experienced over the Nation as a whole without any new large defense-production power consumers, along with catching up on existing deficits, will require 400,000 to 500,000 kilowatts of new generating capacity per year. The present construction program will just about provide this requirement but allows no room for large additional defense loads nor does it provide any appreciable reserve of generating capacity. The Northwest has experienced an unprecedented growth in population during the past 10 years. It is a critical defense area with very large military installations including a navy yard, army camps, huge airfields and a very important atomic energy plant, all having a large concentration of personnel. Some of these installations require huge quantities of power and we want to cooperate with the Federal Government in its responsibility of providing their power requirements under any and all conditions. Because of this situation, it is respectfully requested that your committee give sincere consideration to additional appropriations required to start immediately new projects which the Congress has authorized but have not been started because of lack of appropriations.

We have watched each year for 6 years the delay of construction schedules. In the Bonneville Power Administration's advance program of system development for the period 1947 to 1952 which was issued in October 1945 we note that the Hungry Horse project was scheduled for completion in 1951. Now, on the present schedule, it is to be completed in 1953, a delay of 2 years. McNary project, which was then designated as the Umatilla project, was scheduled for 550,000 kilowatts in early 1952. Now the schedule calls for 560,000 kilowatts by June 1955, a delay of 3 years. Detroit was scheduled for 1951. Now it is 1953, 2 years late. Chief Joseph was scheduled for three units or 200,000 kilowatts, by 1952. Now it is scheduled for the end of 1955, over 3 years late. The first unit at The Dalles was scheduled for 1952; now it is for the end of 1956, over 4 years late. Gentlemen, there is the reason for the perennial power shortage in the Northwest that you have been hearing about.

The Federal Government has taken on the responsibility of developing the Columbia River water resources and by doing so it has made it much more difficult to finance new projects by non-Federal agencies. The non-Federal agencies are doing the very best they can under the conditions existent. Now it is the moral and political responsibility of the Federal Government to continue the development of the Columbia River power resources in a manner that will allow the Northwest to grow and expand and build up its economy and to do its share in any national effort. We do not want to continue in the position where we must tell a prospective, large industrial customer we are sorry, we just do not

have the power, when there are millions of potential kilowatts wasting to the sea every hour of the day.

I wish to impress upon you the urgency of making appropriations needed to maintain the existing construction schedule and also to provide those needed for the start of new projects, otherwise they will be from 2 to 5 years late. Your courtesy and cooperation in allowing me to present the foregoing statement on behalf of the city of Seattle, its citizens, and electric consumers, are very much appreciated.

CRITICAL DEFENSE AREA

Mr. JONES. There is just one thing which I would like to reiterate here, and that is that we of the Northwest are in a very critical defense area where we have large military installations, where we have a large Navy shipyard, where we have huge airfields, and where we have an atomic energy plant.

We have in a great many cases a joint responsibility with the Federal Government in seeing that these concentrations of personnel have certain energy and also that the quantities of power used by some of those installations are provided for.

I would like to say that we are in full accord with the Pacific Northwest Utilities Conference Committee, and hope that you will see fit to put back these appropriations that have been cut. Thank you.

Senator CORDON. Mr. Chairman, I would like to have the record show that Mr. Jones manages the second largest municipal power and light company in the United States, the only one larger being that of Los Angeles.

Incidentally, Mr. Erdahl comes along with the third largest.

Senator CAIN. Mr. Jones, the item is not presently before this committee, but it may well be before our conclusions have been reached.

LOCAL CONTRIBUTIONS TO NORTHWEST PROJECTS

Would you tell the committee, please, the present status of the $500,000 made available by King County, and the $1,000,000 made available by the State of Washington, for employment if and when Eagle Gorge Dam is undertaken by the Federal Government? Is that money still available, were that project to be undertaken this year?

Mr. JONES. The Governor of the State is here. I understand that that money is available, according to the last I heard about it. In both cases it is available, Senator.

Senator CAIN. One last question, if you please, addressed to you and the Governor of Washington, jointly.

When are those moneys likely to lapse or be withdrawn?

Governor LANGLIE. As far as the State is concerned, the money will lapse at the end of the biennium. However, there is no question in my mind but that the legislature will reappropriate it again.

Senator CAIN. That means that if the Congress could not start the project this year, it is your feeling that the State would continue to make available the $1,000,000?

Governor LANGLIE. I feel that they would.

Senator CAIN. Mr. Jones, is your view with reference to King County the same?

Mr. JONES. I think King County would be in the same position. I assume the money will stay there until such time it is used or it is definitely found that it cannot be used.

Senator CAIN. Thank you very much.

Mr. ERDAHL. Thank you very much, Mr. Jones.

I want to ask Senator Cordon, in regard to that third place, whether Bob Jones has been in to see him lately to tell him that he was in second place?

Senator CORDON. I don't reveal the sources of my information.

Senator CAIN. I think if you were to press him he would say that he got it out of the encyclopedia.

Mr. ERDAHL. It has not been that way long enough to have gotten into the encyclopedia.

Next I would like to call Mr. J. Frank Ward, superintendent of the light division of Tacoma City Light.

Chairman MCKELLAR. All right, Mr. Ward.

STATEMENT OF J. FRANK WARD, SUPERINTENDENT, LIGHT DIVISION, TACOMA CITY LIGHT

EXPANSION OF NORTHWEST POWER DEVELOPMENT

Mr. WARD. Mr. Chairman, I have a statement here which I would like to introduce for the record.

Chairman MCKELLAR. Without objection, that will be done.

(The statement referred to follows:)

STATEMENT OF J. FRANK WARD, SUPERINTENDENT, TACOMA CITY LIGHT, TACOMA, WASH.

My name is J. Frank Ward. I am superintendent of the light division, department of public utilities, of the city of Tacoma, Wash., known commonly as Tacoma City Light.

Tacoma City Light began its operations in 1893, 59 years ago. It is one of the oldest municipal electric utilities in the country. Its assets are about $72,000,000 with a bonded indebtedness of $25,000,000. It serves 56,000 customers in an area of some 200,000 population. Its rates are the lowest in the country for communities of its size and its annual residential power consumption is the greatest.

Its properties have been paid for out of revenues. We have never asked for or received Federal assistance in our power development by grant, loan, or accelerated tax amortization.

Since the fall of 1947, immediately after the city had completed a $23,000,000 hydropower development undertaken and built during the war, the city has been purchasing power from the Bonneville Power Administration on contract and now takes about 35 percent of its power supply from that system.

The city has received a Federal Power Commission license to develop the Cowlitz River by construction of two hydropower plants which will have an installed capacity of 460,000 kilowatts, as compared with the present system capacity of 252,000 kilowatts.

Construction has been delayed by a controversy centered around the conservation of anadromous fish runs, but involving local legislation now being subjected to court test. The project will require 3 years to build after construction is begun. It will cost about $146,000,000, and will be financed by revenue bonds of the light division.

Until it can be completed, Tacoma, along with all the rest of the area, will be dependent on Columbia River development by the Federal Government. The output of the Cowlitz development is included in estimates of resources for the area, but even including this large block of power as being available soon, the area will face very large and disastrous power shortages each year for several years to come whenever regional stream flows are at a minimum.

Some concept of the rate at which power demands grow in the Northwest can be gained from the fact that the two cities of Tacoma and Seattle will have added 1,028,000 kilowatts of hydro capability to their systems since 1941, when the Skagit and Cowlitz developments are completed in the next 2 to 3 years. Their

plant investment during that period will have amounted to $366,000,000. From 1941 to date the amount is $117,222,056.

Both cities will still require power from the Columbia River system of the Federal Government, and must also continue to look for new sources of power to develop themselves.

Both cities have experienced load growths for many years that require a doubling of plant capacity every 8- to 10-year period. This is without the addition of large aluminum and similar type loads brought into the area by the Federal Government and served by that system.

More than half of the development of the hydro potential of the Columbia River for power by the Federal Government, so far, has been directed toward serving aluminum, chemical and atomic energy production for national benefit, and the remainder has gone toward serving the demands made by growth of population and general regional developments.

Power so directed, that is, toward uses of general benefit to the industry of the country at large and to national defense, is no longer available for local development and is in fact lost to the local area, even though it brings some compensating increase in employment and dependent diversified industries.

These are the basic reasons why the utilities of the Northwest, even though they desire to be self sufficient in providing power supply for their own needs, must join to gether to ask the Federal Government to maintain its rate of construction of Columbia River development in the combined local and national interest.

Even with the best efforts of Congress along that line in the form of adequate appropriations, it will soon be necessary for public agencies such as Tacoma, Seattle and the public utility districts to ask the Federal Government for, and to assume responsibility for, a share in Columbia River development that will allow them to insure their continued sound economical growth.

LOCAL SHARE OF COLUMBIA BASIN DEVELOPMENT

Mr. WARD. I would like to raise a question that is somewhat related to the question raised by Senator Cain, as to whether or not the relationships between Federal power generation and local power generation are going to continue or will be changed.

We have been back here on the occasion for the second time, in regard to appropriations for projects already under construction.

If it is so difficult for Congress to meet those needs, it can be assumed that it will be even more difficult to start new projects.

The city of Tacoma has, on its own, been anxious to get started on a $146,000,000 project. I would like to take this opportunity to thank the committee for the remarks that were included in its record of last year, which were helpful to us in securing a Federal Power Commission license. We have not yet started that project but will soon, we hope.

Now, this is a large undertaking in the Northwest, and represents a little less than half a million kilowatts of generation. It seems to me that it is time to direct attention, in your various capacities as Senators on these various committees, to the fact that ultimately the people in the Northwest must assume more of a burden for power generation. I think the time will come when public agencies, such as Tacoma City Light, and Seattle City Light and the public-utility districts must ask the Federal Government for a larger share in the development of the Columbia River.

All of the utilities now have programs for developing some of the tributaries. Our development is on one of the tributaries. That is true of the Washington Water Power Co. It is also true of the Portland General Electric Co., and of the Pend O'Reille public utility district.

The fact that we have undertaken and have in process $1,031,000,000 in work over this 15-year period ought to indicate that ultimately we should grow up to the place where we can take on some of the major developments of the Columbia River itself.

I do not want to start a controversy with any of the Federal agencies. I would like to present that thought, because we do want to be partners with the Federal Government in the development of our area, and not be in any sense subordinates or children.

Chairman McKellar. We are very much obliged to you.

Senator Cain. Would you permit me to say—Mr. Ward happens to be a personal friend of mine—that my respect for the objectivity and the thoughtfulness of his studies concerning power matters is extraordinarily keen, sir. This is intended to be what it ought to be—just a compliment to his presence this afternoon.

Mr. Ward. Thank you.

Mr. Erdahl. Thank you, Mr. Ward.

Our next witness is Mr. M. L. Blair, who is superintendent of system operations of the Washington Water Power Co. Mr. Blair, do you have something you want to add?

Mr. Blair. I have nothing to add, sir.

Mr. Erdahl. I might say that Mr. Blair is chairman of our loads and resources committee.

If you gentlemen have any questions pertaining to diversity advantages, how we have accumulated data on the pool operations, and so forth, I think Mr. Blair could be most helpful in answering them.

And if, in the future, you gentlemen feel that there are questions that you would like to direct to him, I will do my best to get those questions answered on the basis of the opinions of the group as a whole, and not that of any one individual.

Now, if there are any questions at all, of any of our group, Senator, we will be glad to attempt to answer them.

We have wanted to do the best possible job of convincing you of one thing—that our problem out there is serious, and must be met. It just must be met if we are going to serve our people properly in the Northwest.

We wanted to impress upon you gentlemen the partnership part that you have, and without which we are not going to be successful unless there is some drastic change in the whole scope of things.

I thank you very much, Senators, for your attention.

Chairman McKellar. At this point in the record I would like to insert a letter from Mr. Gus Norwood, executive secretary of the Northwest Public Power Association of Vancouver, Wash., together with a statement of Mr. Norwood's.

(The letter and statement referred to follow:)

Northwest Public Power Association, Inc.,
Vancouver, Wash., April 11, 1952.

Senator Kenneth McKellar,
Chairman, Senate Appropriations Committee,
Senate Office Building, Washington, D. C.

Dear Senator McKellar: The people of the Pacific Northwest are grateful for the consideration which you and the members of the Senate Appropriations Committee have given to our much-needed hydroelectirc power projects on the Columbia and Snake Rivers.

Last year you urged the starting of Ice Harbor Dam but the House conferees killed it. We hope this year as a result of added evidence that the House will go

along with the Senate. This presupposes and we express the fervent hope that your committee will reinstate the $5,000,000 item for Ice Harbor Dam.

The Northwest Public Power Association endorses the President's budget for the Corps of Engineers as it affects the Pacific Northwest. It is a sound and sensible program.

Every cent invested in the Federal power program is repaid into the United States Treasury with interest. This is purely an investment program. No tax revenues are needed.

In view of our inability to appear personally before your committee, it is requested that the enclosed statement be made part of the hearings record on the Corps of Engineers budget.

Sincerely,

NORTHWEST PUBLIC POWER ASSOCIATION,
GUS NORWOOD, *Executive Secretary.*

Enclosures.

STATEMENT OF GUS NORWOOD, EXECUTIVE SECRETARY, NORTHWEST PUBLIC POWER ASSOCIATION, RELATING TO APPROPRIATIONS FOR CORPS OF ENGINEERS CIVIL FUNCTIONS

My name is Gus Norwood. I serve as executive secretary of the Northwest Public Power Association, which consists of 78 municipal electric systems, public-utility districts, and rural electric cooperatives in Montana, Oregon, Washington, Idaho, and Alaska.

These systems in 1951 paid $11,529,724 into the United States Treasury for power generated at Federal dams on the Columbia River. These power pruchases are increasing rapidly each year. The increase in 1951 over 1950 was 37 percent. These systems are good customers and they have a direct and friendly interest in the Federal power program in the Northwest. Incidentally, they furnish electric service to 2,000,000 people.

Last February in a series of seven regional meetings which I attended between Bonneville Power Administration officials and our member systems, it was strikingly evident that long-range planning of generation facilities is imperative to provide adequate power supplies for the continued healthy growth of industrial, commercial, and domestic power use. With this in mind, we have reviewed the budget request of the Corps of Engineers for fiscal year 1953. We find that its requests are conservative.

SUMMARY

This association endorses the recommendations in the President's budget message for the Pacific Northwest.

ECONOMIC DISTRESS

The current power shortage in the Pacific Northwest results from inadequate advance planning of new generation facilities. It may take 6 years to catch up with load growth. But the time lost can never be recovered in terms of employment, industrial production, and new wealth created. This must not continue.

Economically the Pacific Northwest is a distress area.

According to the April 9 Wall Street Journal unemployment compensation for the first 3 months of 1952 in Oregon was $7,383,083, an increase of 51 percent over the same quarter in 1951 when $4,897,407 was disbursed.

In the State of Washington the February 1952 payments of $3,618,099 ran 65 percent over the $2,186,853 paid in February 1951.

Probably one of our best arguments for going ahead with the construction of Ice Harbor Dam and the Dalles Dam is the fact that we are paying for them whether or not we build them. We are paying for them in terms of unemployment compensation.

If we built these dams, they would constitute capital investments financed not by taxes, but by United States Treasury bonds. The Federal Government would act merely as banker. The power revenue from the dams must service the bonds and ultimately pay them off completely together with interest. These are self-liquidating projects.

But at the same time by building these dams we would also eliminate much of this unemployment compensation burden. The money for paying unemployment compensation does not come from the issuance of bonds, but is an immediate burden upon the taxpayer. Furthermore, the recipient of the unemployment

compensation can probably just barely struggle along and will be in no position to pay Federal income taxes.

Thus the payroll from dam construction, while going into wealth-creating capital investment, would provide Federal income taxes in contrast to the present unemployment compensation which provides virtually no tax base and is itself a tax burden with no relief in sight.

The previously mentioned reports from the Wall Street Journal are substantiated in greater detail in a separate statement and table which is attached as an appendix.

However, this trend of 1951 and 1952 is part of a long-range problem as is shown in the following summary of an economic study covering the period 1939 to 1947.

"In spite of the growth of aluminum and other industries in the Pacific Northwest, expansion of manufacturing employment in relation to population has declined in this area relative to the rest of the country. On a per capita basis, Idaho, Oregon, and Washington are less industrialized in comparison with the Nation than in 1939. Manufactures in these Pacific Northwest States in 1939 employed 45 workers per thousand of population or 75 percent of the national average of 60. By 1947 manufactures in the Pacific Northwest expanded, employing 52 workers per thousand of population, but the rate of growth in the Nation was larger, and by 1947 manufactures employed 83 workers per thousand population. As a result employment in manufactures per thousand of population in Idaho, Oregon, and Washington declined to only 62 percent as large as that in the Nation. This decline in per capita employment relative to the national average was larger in the Pacific Northwest than in any other section of the country."

The answer to the unemployment compensation problem is to put the men to work building dams.

The answer to the power shortage is to build dams.

The answer to the economic instability of the Pacific Northwest is to balance the highly fluctuating seasonal employment of lumbering and agriculture with industrial payroll which means there must be power and that means building dams.

The President has received recommendations from numerous agencies which have studied the pros and cons and the final result has been the budget message which likewise has suggested to Congress the obvious answer that more dams must be built and preferably Ice Harbor Dam and the Dalles Dam.

ICE HARBOR DAM OVERDUE

The board of trustees of this association at its winter meeting on January 25, 1952, reaffirmed its position in urging the immediate start of construction of the Ice Harbor Dam on the Snake River, as recommended by the President, with an initial appropriation of $5,000,000.

The people of this region were shocked last year when they learned that this important power and navigation project was omitted from the appropriations bill. Liberal and conservative newspapers alike reacted in concert and editorialized shoulder to shoulder to the fact that the omission of Ice Harbor Dam was regrettable.

The construction of Ice Harbor Dam is the first step of the ladder in the development of the 11 million kilowatts of potential hydroelectric power of the Snake River and it is also the first step in converting a useless and dangerous water-course into a valuable channel of commerce, making possible ultimately continuous water navigation from the Pacific Ocean 495 miles to Lewiston, Idaho. This is the most promising undeveloped inland navigation left in the country.

The proximity of the Ice Harbor Dam to the Hanford installation of the Atomic Energy Commission makes the construction of this 260,000-kilowatt generating plant highly desirable. This is particularly true in view of the recent request of the President for the expansion of the Hanford works. You will note that this request was made since the present appropriations bill went through the House of Representatives.

Utility operators already last winter were perturbed by the suggestions of AEC that the Hanford works might have to be supplied with electricity by means of separate circuits feeding from isolated generators at Grand Coulee Dam. This has been seriously proposed in order to reduce the variation in frequency and voltage which has occurred at Hanford during peak-hour operations. Such isolation of Grand Coulee generators would result in a serious loss to the Northwest power pool, both in terms of actual kilowatts and in flexibility of operations.

This problem could have been prevented had the Ice Harbor Dam been started in 1948. The problem will become more aggravated with each passing year This isolated bus operation idea almost came to a head last month when Grand Coulee Dam lost seven huge generators for some 6 hours. Only the utmost efforts of the Coulee operators prevented tens of thousands of homes from being blacked out that night in order to keep up power for Hanford.

In other words the House Appropriations Committee has allowed this situation to get out of hand. If there is no other solution to this problem perhaps a congressional investigation should be made.

The AEC also has hinted that it might be desirable for them to build steam generating plants at Hanford. This would be wasteful.

Thus it will be seen that the members of this association become directly involved even on the national defense aspects of this power project.

Equally direct is our concern over the inadequate power supply in the Ice Harbor Dam area. The growth of civilian power requirements incident to the Hanford project is in direct proportion and in fact somewhat in advance of the power requirements of AEC. For example, Benton County in the State of Washington is the fastest-growing county in the Nation, having jumped from 12,000 population in 1940 to 65,000 in 1950. This is a gain of over 440 percent. All of these people use electricity.

The Ice Harbor Dam is a good power and navigation project. It has been designed with fish ladders adequate to enable the fish to climb the 100 feet necessary for them to reach their spawning grounds. The dam will rest on an excellent foundation and present no major engineering problems. Since the construction will be only a few miles from Pasco, it will not be necessary to expend large quantities of materials for building new construction towns.

From an economic standpoint, the members of this association cannot be placed in a position of supporting a project which will result in a serious increase in power costs. We are therefore happy to note the excellent feasibility of Ice Harbor Dam as a low cost power project. Since the members of this association are purchasing over $12 million of electrical energy a year and are doubling their purchases about every 4 years, your committee will appreciate our interest in promoting first the lowest cost power projects. Fortunately in this case one of the lowest cost power projects can be urged equally from the standpoint of national defense and from the standpoint of economic feasibility and sound engineering.

FISH QUESTION RESOLVED

The House Appropriations Committee chairman, Congressman Clarence Cannon, has hesitated to support Ice Harbor Dam because of a fear that fish life would be destroyed.

The testimony of Director Albert M. Day before the House Appropriations Subcommittee might have left the impression that some fishery resources might be destroyed.

Any such impression would be grossly misleading. The Ice Harbor Dam fish ladders will be 100 feet high as compared to the 60-foot ladders at Bonneville Dam but they will incorporate resting pools and other features based on the Bonneville experience.

In order to insure that there might be no possibility of misunderstanding the testimony of Mr. Albert M. Day, there is attached herewith a copy of a letter of clarification signed by Mr. Day.

Attachment.

DEPARTMENT OF THE INTERIOR,
FISH AND WILDLIFE SERVICE,
Miami, Fla., March 18, 1952.

Hon. CLARENCE CANNON,
House of Representatives, Washington, D. C.

MY DEAR MR. CANNON: I have received word while attending the North American Wildlife Conference here in Miami that some confusion has resulted from the testimony I presented during my appearance on March 1 before the Appropriations Subcommittee considering funds for the construction of Ice Harbor Dam.

As I attempted to point out during the discussion, there is no positive information now available to us as to the final effects on the fisheries of the construction of Ice Harbor and the other Snake River dams. We need a great deal more information regarding the effects of dams upon the movement of anadromous fishes, particularly the downstream migrant fingerlings, before we can answer with assurance

many of the complicated questions which now arise. I brought out this need in my testimony, emphasizing the advisability of additional studies to develop facilities which might enable the fish to overcome the handicaps which any dam poses to migratory species.

I should like in particular to clarify the point regarding the extermination of any species of salmon at Ice Harbor Dam. Any impression which my testimony may have left that the extermination of a species would result was in no way intended by my statements. I think there is no question that species as such are not in danger of extinction. There is no question but what there will be some losses, and if the dam is built, the fishery interests are prepared to prescribe the best possible devices known to modern science to keep those losses at a minimum. As I brought out in my testimony, this will probably mean the salvage of some late runs of one species and will require facilities for trapping, holding, and spawning the fish so that the eggs may be taken and hatched and the resultant young later liberated into the stream.

I regret that any confusion has resulted or that an impression was left that species of fish were in danger to the point of extinction. Such an interpretation was not intended.

Sincerely yours,

ALBERT M. DAY, *Director.*

UNEMPLOYMENT IS INCREASING IN WASHINGTON AND OREGON

In January 1952, 104,000 workers in Oregon and Washington were unemployed compared with 82,000 in January 1951. This 22,000 increase in unemployed is due to the fact that job opportunities have not increased as rapidly as additions to the labor force. Nonagricultural employment in the two States stood at 1,107,000 in January 1952 compared with 1,103,000 in January 1951. The increase can almost entirely be attributed to the 4,500 increase in employment at Boeing Aircraft, nearly 3,000 increase in shipbuilding and the 12,000 increase in Government. A substantial part of the increase in Government employment was at military installations. The Pacific Northwest economy today is to a large extent depending on the defense program. The three largest employers are: (1) Boeing Aircraft, (2) Hanford Engineering Works, and (3) the Bremerton Navy Yard.

The Pacific Northwest needs new job opportunities in industries with a sound resource base operating in peacetime as well as for defense. For such an industrial expansion electric energy is needed. The Northwest does not have other fuels available at a competitive price.

Even in the electroprocess industries where the Northwest has a competitive advantage if power is available, the rate of growth is very small. The reason for this small rate of growth is the fact that the power is not available for any expansion. In 1949 the aluminum reduction mills in the Pacific Northwest produced 52 percent of the Nation's primary aluminum. Expansion is going ahead faster in the rest of the Nation than in the Northwest and in 1951 Oregon and Washington accounted for only 44 percent of the Nation's primary aluminum output. Even with the additional expansion projected in the Northwest, the proportion of the industry in this area will decline. In 1954 Pacific Northwest mills will produce an estimated 37 percent of the Nation's aluminum.

Nonagricultural employment

	January 1952	January 1951	Change	Percent change
Oregon	420,200	427,600	−7,400	−1.7
Manufacturing	123,900	131,200	−7,300	−5.6
Lumber and wood products	66,900	75,900	−9,000	−11.8
Transportation equipment	4,300	1,800	+2,500	+138.9
Canning and preserving	3,600	4,800	−1,200	−25.0
Textiles and apparel	4,600	5,200	−600	−11.5
Nonmanufacturing	296,300	296,400	−100	
Contract construction	21,100	23,700	−2,600	−11.0
Government	66,300	64,200	+2,100	+3.3
Unemployment	45,000	33,600	+11,400	+13.4
Washington	686,800	675,100	+11,700	+1.7
Manufacturing	176,000	175,700	+300	+.2
Lumber and wood products	47,900	56,100	−8,200	−14.6
Aircraft (Boeing)	28,000	23,500	+4,500	+19.1
Shipbuilding	4,600	2,300	+2,300	+100.0
Nonmanufacturing	510,800	499,400	+11,400	+2.3
Contract construction	37,700	39,900	−2,200	−5.5
Service industries	78,100	74,900	+3,200	+4.3
Government	146,000	136,400	+9,600	+7.0
Unemployment	59,300	48,000	+11,300	+12.4
Total, Oregon and Washington nonagricultural employment	1,107,000	1,102,700	+4,300	+.4
Total, Oregon and Washington unemployment	104,300	81,600	+22,700	+12.8

Source: Washington Employment Security Department; Oregon State Unemployment Compensation Commission.

CONTINUATION OF COLUMBIA BASIN DEVELOPMENT

Senator CORDON. Mr. Chairman, I would like at this time that there be inserted in the record a letter and an accompanying resolution from the Oregon Wheatgrowers League, which has to do with the development of the Columbia River and its tributaries.

I would also like to have inserted in the record a resolution of the Portland Chamber of Commerce, which has to do with the channel of the Columbia and Willamette Rivers.

Finally, I would like to have placed in the record a resolution of the Portland Steamship Operators' Association on the same subject.

Chairman MCKELLAR. Without objection, the letter and resolutions referred to will be made a part of the record.

(The documents referred to follow:)

THE OREGON WHEAT GROWERS LEAGUE,
Pendleton, Oreg., February 28, 1952.

Hon. GUY CORDON,
United States Senate, Washington, D. C.

DEAR SENATOR CORDON: The executive committee of the Oregon Wheat Growers League met yesterday and one of the items considered was the program for developing the Columbia River watershed as outlined in the Army engineer's comprehensive report No. 308. We wish to reaffirm our support for an orderly and continuous development of the Columbia River and its tributaries, with particular emphasis now being needed to work on those projects which will furnish power for defense.

The enclosed resolution reaffirms our support for construction of Ice Harbor lock and dam. We would appreciate your consideration of this resolution and ask you to call it to the attention of the chairman of the Senate Appropriations Committee.

Sincerely yours,

RICHARD K. BAUM, *Secretary-Treasurer.*

Enclosure.

RESOLUTION

Be it hereby resolved, That the executive committee of the Oregon Wheat Growers League meeting at Pendleton, Oreg., February 26, 1952, does reaffirm its support for immediate construction of Ice Harbor lock and dam as part of the comprehensive 308 report. The Ice Harbor Dam has been recommended by the Bureau of the Budget and so stated in the President's report to Congress. At the present time our Nation is faced with an emergency situation in which a great share of our productive efforts are now being concentrated on building up our defensive strength. Ice Harbor Dam is needed as a source of power for the defense program, particularly in the Hanford atomic project area. While power is the first and pressing need, the Ice Harbor project is a multiple-purpose dam, which would provide in addition, navigation, irrigation, and recreation benefits.

Therefore, the Oregon Wheat Growers League request the Committee on Appropriations in both Houses of Congress to appropriate $5,000,000 necessary to initiate construction of the Ice Harbor lock and dam during the fiscal year 1953.

OREGON WHEAT GROWERS LEAGUE, INC.
FLOYD ROOT, *President.*

RESOLUTION ADOPTED BY THE BOARD OF DIRECTORS, PORTLAND CHAMBER OF COMMERCE, APRIL 18, 1952

Whereas the Portland Chamber of Commerce is a nonprofit organization the membership of which consists of business firms and individuals in Portland and the area adjacent thereto, for the purpose of developing the Portland trade area; and

Whereas the Portland Chamber of Commerce has, as one of its many functions, a duty of promoting the maritime, shipping, and commercial interests of the port of Portland; and

Whereas the phenomenal growth of the port of Portland since World War II has increased the need for adequate ship channels from the lower Willamette River to the sea; and

Whereas the approved project depths and widths of channels are not being provided or adequately maintained by the Corps of Engineers due to insufficient funds for such purpose and that such lack of funds for channel maintenance is detrimental to shipping and the best interests of the port of Portland and the other Columbia River ports to be served; and

Whereas costly delays now encountered, together with the additional hazard, and possible damage to vessels as a result of the physical inadequacy of the Columbia River entrance, and the lack of maintaining full project width and depth in the channel of the Columbia and lower Willamette Rivers below Portland, Oreg., and Vancouver, Wash.: Therefore be it

Resolved, That the Portland Chamber of Commerce, at a regular meeting of its board of directors held in the chamber offices on April 18, 1952, formally petitions the Congress of the United States to provide the Corps of Engineers, Portland, Oreg., district, with funds sufficient to maintain the authorized widths and depths in the Columbia and lower Willamette Rivers, and the project for the Columbia River at its entrance; and, be it further

Resolved, That the Portland Chamber of Commerce hereby petitions the Congress of the United States to provide for expediting the completion of the study for the review of the report on the Columbia River, Oreg. and Wash., contained in House Document No. 94, Fifty-sixth Congress, first session, as authorized by resolution of the Committee on Public Works of the United States Senate, adopted August 4, 1948, and by resolution of the Committee on Public Works of the House of Representatives, adopted August 6, 1948, with a view to determining the advisability of modifying the existing project in any way at this time.

EDGAR W. SMITH, *President.*

RESOLUTION ADOPTED BY PORTLAND STEAMSHIP OPERATORS ASSOCIATION, INC., PORTLAND, OREG., MARCH 27, 1952

Whereas Portland Steamship Operators Association, Inc., Portland, Oreg., is interested in promoting the maritime, shipping, and commercial interests of the port of Portland; and

Whereas the port of Portland is second among the Pacific-coast ports in volume of ocean-borne tonnage handled, and thirteenth in such tonnage volume compared for all United States ports; and

Whereas the movement of maritime shipping on the Columbia and Willamette Rivers in World Wars I and II, and at the present time, is of vital importance to the defense of the Nation; and

Whereas Portland Steamship Operators Association, Inc., Portland, Oreg., is fully cognizant of the fact that the commerce and industrial development of any port or area served by the Columbia River directly benefits the commercial interests of the port of Portland, and that any condition which impedes the free and safe movement of traffic on the Columbia River, to and from the sea, has a detrimental effect on the port of Portland; and

Whereas there have been numerous complaints by pilots, mariners, and ship operators to the effect that the Columbia River at its mouth, through which all vessels in offshore and coastwise commerce must pass to and from the port of Portland, as well as the ports of Astoria, Oreg., Longview and Vancouver, Wash., and other Columbia River ports, is not presently improved to provide a low-water depth which will permit the unimpeded movement of such vessels; and

Whereas delays now encountered, together with the hazard and possible damage to vessels as a result of the physical inadequacy of the Columbia River entrance channel, will and are causing loss of business to this port area; and

Whereas the approved project depth for the channel of the Columbia and lower Willamette Rivers between Portland and the sea is 35 feet, with a minimum width of 500 feet, and such depth and width was determined to be the proper dimensions at the time the channel project was last revised, upon the recommendation of the Engineers and the Port of Portland Commission, and complaint is made that such project dimensions are not being adequately maintained, due to lack of sufficient funds being appropriated therefor and

Whereas these two afore-mentioned items, via the condition of the channel at the mouth of the Columbia River and the lack of full project width and depth in the channel of the Columbia and lower Willamette Rivers below Portland, Oreg., and Vancouver, Wash., are adversely affecting the maritime, shipping, and commercial interests of the port areas tributary to the Columbia River: Now, therefore, be it

Resolved, That Portland Steamship Operators Association, Inc., hereby petition the Congress of the United States to provide the Corps of Engineers, Portland, Oreg., district, with funds sufficient to maintain authorized channel widths and depths in the Columbia and lower Willamette Rivers and the project for Columbia River at the mouth; and be it further

Resolved, That Portland Steamship Operators Association, Inc., hereby petition the Congress of the United States to provide for expediting the completion of the study for the review of the report on the Columbia River, Oreg. and Wash., contained in House Document No. 94, Fifty-Sixth Congress, first session, as authorized by resolution of the Committee on Public Works of the United States Senate, adopted August 4, 1948, and by resolution of the Committee on Public Works of the House of Representatives, adopted August 6, 1948, with a view to determining the advisability of modifying the existing project in any way at this time.

AMERICAN MAIL LINE,
Portland, Oreg., May 14, 1952.

Re Columbia River project.

Hon. GUY CORDON,
Senate Office Building, Washington, D. C.

DEAR SENATOR CORDON: I had hoped that I could have remained in Washington so as to have had the opportunity to appear before the committee investigating conditions of the Columbia River ship channel from Portland, Oreg., to the ocean. Unfortunately, I was called back to Oregon before that could be accomplished. Consequently, I respectfully offer for the record a statement of my views and experience in regard thereto.

I have been directly connected with shipping in this area for the past 30 years. As a ship's officer through various positions to vice president of a large trans-Pacific steamship line, which position I now hold, I have personally handled ship operation in and out of the Columbia River, and I speak with some knowledge of the development of this area directly attributable to maritime commerce and the contribution the ports of the Columbia and Willamette Rivers have made to our national well-being.

Within the past 10 years there has been a noticeable deterioration of the main channel from Portland to Astoria and from Astoria to the sea, so much so that during certain periods of the year deep-water vessels have been limited as to draft to the detriment of the commerce of the area.

Innumerable casualties and groundings have occurred during this period of great deterioration, causing extreme expense to private operators and to the Government itself. Only very recently several Government vessels were badly damaged and delayed due to groundings in the channel, and in one instance in January of this year a Government vessel, fully loaded with wheat for India, struck in the channel at the entrance, which almost caused the vessel to be lost. Only excellent seamanship and fast action by salvage tugs saved this vessel and her crew from complete destruction. Even at that the Government incurred considerable expense for salvage operations, delay, and damaged repairs.

During and since the war, vessels utilizing the Columbia and Willamette Rivers have been of greater tonnage and deeper draft than those that were operating into the area prior to that time and when conditions were much more satisfactory than they are now. It is safe to say that, unless immediate relief is forthcoming in the maintenance and improvement of the ship channel, the value of the Columbia River and deep-water navigation will be seriously impaired.

In these days, where so much emphasis is given to the defense and building up of the resources of our country, the shipping industry and local populace finds it very difficult to understand why a matter of such vital importance as to the keeping open of our ocean trade lanes should be so utterly ignored.

In view of the foregoing ,we feel we must bring to your attention the seriousness of this situation and request that every consideration be given to the work of widening and deepening of the ship channel.

Sincerely yours,

AMERICAN MAIL LINE, LTD.,
W. L. WILLIAMS,
Vice President.

STATEMENT OF T. LELAND BROWN, ATTORNEY, REPRESENTING THE WARM SPRINGS TRIBAL COUNCIL

FISHING RIGHTS IN INDIAN TREATIES WITH REFERENCE TO THE DALLES

Senator CORDON. Mr. Chairman, there are two groups here representing two Indian groups in Oregon that have fishing rights by treaty at The Dalles. They desire to be heard. I understand that they have prepared statements. I am sure it will not take long to hear them, and then we can close this matter, if the chairman will indulge us.

Chairman MCKELLAR. If we can close the hearing in about 15 minutes, that will be all right.

Senator CORDON. I think we will take less than that.

Mr. T. Leland Brown represents the Warm Springs Tribal Council and Mr. Louis McFarland represents the Confederated Tribes of the Umatilla Indian Reservation.

Chairman MCKELLAR. Will you gentlemen come forward, please?

Senator CORDON. Mr. Brown of The Dalles, Oreg., is an attorney at law, and formerly a district attorney of that area. He represents the Warm Springs Tribe of Indians.

Chairman MCKELLAR. All right, gentlemen. We will be glad to hear you.

Mr. BROWN. Mr. Chairman, I have a statement that I would like to offer for the record.

Chairman MCKELLAR. Without objection, that will be placed in the record.

(The document referred to follows:)

STATEMENT OF MIDDLE OREGON INDIANS, CONFEDERATED BY THE UNITED STATES AND CHARTERED BY AN ACT OF CONGRESS UNDER THE NAME OF THE CONFEDERATED TRIBES OF WARM SPRINGS RESERVATION OF OREGON (DOG RIVER WASCOS, DALLES WASCOS, CASHELLA BAND OF INDIANS, JOHN DAY OR DOCK SPUS, TIAH OR UPPER DESCHUTES BAND OF WALLA WALLAS AND WYAM TRIBES OR BANDS) IN OPPOSITION TO APPROPRIATING FUNDS FOR THE CONSTRUCTION OF THE DALLES PROJECT IN OREGON, EXCEPT FOR NATIONAL DEFENSE PURPOSES

Mr. Chairman, we have traveled over 3,000 miles as elected delegates by th e general counsel to represent our people, the Confederated Tribes, Warm Sprin gs Reservation, Oreg., to file their objections to appropriating funds to be used in the building of The Dalles Dam project in the Columbia River in the States of Oregon and Washington; until a written contract of settlement between our people and the Government has been executed. We have opposed The Dalles Dam project from its inception and have been represented in person or by b efs in all hearings before the Army Engineers on this project.

Last year we appeared before the subcommittee of Army Civil Functions, Committee on Appropriations in the House of Representatives, where we made oral statements and filed a written brief which states our case and may be found in part 2, civil functions, Department of the Army Appropriations for 1952, Hearings before the Subcommittee on Appropriations, House of Representatives, pages 378 to 397, inclusive. At all these hearings we have opposed the building of said project and our people are still opposed to the building of said dam unless Congress decides that this dam is vitally needed for our national defense.

In that event, as patriotic citizens, naturally we will withdraw our objection providing we are justly and adequately compensated for the loss of our property, the Indian fishery confined within The Dalles pool—the greatest fishery in the United States.

We wish to point out that our people have never engaged or participated in any hostilities of any kind or nature against the United States and its troops. That since the event of the white man in our domain, we have cherished his friendship and protected his life and property. During the Modoc War, the Commander of the United States Army, after fighting the Modoc Indians for several months and losing the lives of over 1,000 Regular and volunteer soldiers sent an officer of the United States Army who recruited a company of 74 Warm Springs Indians who scouted out the position of the Modocs, captured their leader, Captain Jack, and the other Modoc braves, ending the war.

The Warm Springs people were well represented in the United States Armed Forces in World War I. There were 82 Indians enrolled in the armed services of our country in World War II; 5 of whom paid the supreme sacrifice, 4 being killed on the battlefield and three seriously wounded, to preserve this great country of ours. Warm Springs Indians are now engaged in the Korean conflict.

We understand that there is a certain tribe of Indians which has made statements at various times before committee hearings in Congress and to Army engineers that these Indians own the fishery in its entirety. The treaty of June 25, 1855, entered into between the United States and the Warm Springs Indians, was signed near The Dalles, Oreg., on the south banks of the Columbia River where this fishery is located, the home of our people. The treaty of the tribe which questions our interest in this fishery was executed at Walla Walla, 150 miles from this fishery.

The Indians who participated in the execution of the Warm Springs treaty were the tribes and bands of Indians that lived and had possession of this fishery at the time of its signing. This fishery is now known as the Celilo fishery.

Several years after the signing of this treaty a few white men through the United States Land Office acquired patents at The Dalles and took possession of some of the Indian fishing sites. The Indians complained to Congress and it authorized and made an investigation. See Executive Document No. 183, volume 26, House of Representatives Executive Documents for the First Session, Fiftieth Congress, 1887–88. As a result of this investigation Congress appropriated and authorized the Bureau of Indian Affairs to purchase for the use and benefit of the Warm Springs Indians that portion of said fishery which had been sold to the white man. (See 25 U. S. Stat. 235.) For some unknown reason the Bureau of Indian Affairs did not use the appropriation and it reverted to the general fund, and again the Congress, in 1917 (see 39 U. S. Stat. 986), appropriated money to purchase that portion of the fishery in possession of the white man. The Bureau a second time failed to follow the dictates of Congress and the money apparently reverted to the general fund.

The State of Oregon has always recognized the right of the Warm Springs Indians to occupy and use this fishery (see ch. 346 Oregon Laws 1949), which reads as follows:

"There shall be excluded from the operation of this act any Warm Springs, Umatilla, Yakima, Wasco, Tenino, Wyam, and other Columbia River Indians affiliated with the afore-mentioned tribes and entitled to enjoy fishing rights, or privileges granted to such Indians under the terms of the treaties made by the United States with the Warm Springs Indians June 25, 1855, and with the Umatilla and Yakima on June 9, 1855."

The Wasco, Tenino, and Wyam Tribes mentioned in said act signed the June 25, 1855 treaty and are members of the Confederated Tribes of Warm Springs Indians. This treaty, among other things, provides as follows:

"Article I * * * That the exclusive right of taking fish in the streams running through and bordering said reservation is hereby secured to said Indians; and at all other usual and accustomed stations, in common with citizens of the United States, and of erecting suitable houses for curing the same * * *."

The dam, when built, will destroy the fishery forever. There will be no other fishing places where we can even secure an adequate supply for our subsistence purposes. It is impossible to find a yardstick to measure the value of this fishery. Since time immemorial it has been our perpetual source of food and income. Like some of the other tribes of other Indians interested in The Dalles Dam project, we do not have lands to till from which to derive our living. There is only 4.5 acres of tillable soil per capita on the Warm Springs Reservation and because of climatic conditions very few agricultural products can be grown. Our only resources are timber, fishing, and stock raising, and in this latter resource our reservation is limited to the grazing of 4,000 head of cattle. There are now 1,078 persons enrolled on the Warm Springs Reservation. Because of our limited resources we depend to a large extent on this fishery for our food and livelihood. We believe it is our most valuable resource.

Since the Congress of the United States appropriated $4,000,000 to start the construction work on this project, we have had various conferences with the officials of the Portland District Office of the United States Corps of Engineers Two of these officials: Mr. Percy Othus and Mr. J. W. Elliott, have made a special study of the question of Indian treaty fishing rights at this Indian fishery, confining this investigation to the area of The Dalles Dam pool. Before them is a report of the Oregon Fish Commission of the Indian fishery at Celilo, and a report of the United States Fish and Wildlife Service on this fishery made in 1951. With the help of the Engineer's legal staff they have studied the history of the fishery and determined which tribes used this fishery prior to 1855, the year of the execution of the treaties with the Warm Springs, Umatilla, and Yakima Indian Tribes. We have been told by Colonel Lipscombe, Mr. Othus, and Mr. Elliott, that they recognize the validity of the Warm Springs claim at the Celilo fishery.

There were statements made this year to the House Appropriations Committee on Army Civil Functions which gave the impression that the Corps of Engineers have done nothing toward negotiations regarding the payment to the Indians for their claim of damages for the destruction of the fishery within the Dalles Dam pool.

This is erroneous. Together with the Umatilla Indians, our friends, who also live in Oregon, we started to negotiate with the Portland office of the Corps of Engineers and have held several meetings since November 1951. We made the proposal that if the Dalles Dam project is built we would settle the Warm Springs and Umatilla claims for the loss of this fishery for a total sum of $20,000,000. On May 9, 1952, in the Office of the District Engineer of Portland, Oreg., Colonel Lipscombe made the Warm Springs and Umatilla Indians a counter offer of $7,230,000, for a complete release and a quit claim from the two tribes, each of which would enter into a separate agreement releasing the United States Government through the United States Army Engineers from all claims, demands, loss or damage to the Indians by reason of the construction of the Dalles Dam. This settlement agreement as proposed by the Engineers would not purport to affect in any way the treaties with the tribes.

As representatives of the Warm Springs people, we believe that they are in agreement with the Engineers as to the general manner in which the fishery is being appraised; that is, by computing the annual value of the fishery to the Indians on the basis of the annual poundage catch and capitalizing the annual value to arrive at a total value. The difference in the valuation made by the Engineers and that made by the Warm Springs Indians is due to a difference in interpretation of statistics relating to the quantity of fish taken at Celilo, this difference

being in the determination of the applicable fish prices and a slight difference in the percentage figure used in capitalization computations.

Our first settlement offer, based on figures available to us, may be too high. But on the other hand, we believe the figure offered by the Army is too low for final settlement; both figures being used for the purpose of bargaining. Colonel Lipscombe has promised us that the Corps of Engineers will deal with us fairly, and their dealings with us so far coincide in every respect with his statements. On the other hand, we are entering into these negotiations in good faith and asking for only a reasonable and just compensation for property we will lose forever, and which we are entitled to be paid for at its present full value under the treaties, the Constitution and the laws of our land.

The Warm Springs people have faith in the Congress in that the second session of the Eighty-first Congress passed a public law to compensate the Confederated Tribes of the Warm Springs for land wrongfully taken away from them by the United States Government.

At this writing we have no thought that we will not be dealt with fairly. If this committee decides that this project is in the best interest of national defense, we will abide by its decision. However, there should be an understanding between the Army engineers and the Indians that none of the money appropriated should be spent until an opportunity has been provided for the negotiation and settlement of the Indian claims. We think that such an agreement could be reached within 60 days for transmission to a vote of the members of our tribe.

We thank you for considering the contents of this statement.

Respectfully submitted.

THE CONFEDERATED TRIBES OF WARM SPRINGS RESERVATION OF OREGON

By CHARLES JACKSON,
Vice Chairman of Tribal Council.

By FRANK SUPPAH,
Member Tribal Council.

By T. LELAND BROWN,
Attorney.

OPPOSITION TO THE DALLES DAM PROJECT

Mr. BROWN. I thank the committee for this opportunity of presenting the views of the Warm Spring Indians of Oregon. I will be very brief.

The Warm Spring Indians have appeared in the various hearings held by the Army Engineers, and by the House Committee on Appropriations, and have opposed the building of the Dalles project from its inception, with this reservation: that if the Congress of the United States decides that it is necessary for national defense, then in that event we withdraw our opposition, and ask you to compensate us for the loss of that great fishery, the greatest fishery in the United States.

INDIAN FISHING RIGHTS

Chairman MCKELLAR. What was the sum that was asked for your loss?

Mr. BROWN. Well, the fishery has been appraised by the Fish Commissions of Oregon and Washington as having a value of $23,000,000, not taking into consideration the open season subsistence catch by the Indians or the sale of fish to the tourists.

Chairman MCKELLAR. Is that set out in your statement?

Mr. BROWN. That is set out in my statement, Senator.

Chairman MCKELLAR. All right. Thank you.

Mr. BROWN. What I wish to point out is these Indians had possession of that great fishery from time immemorial. They have de-

pended on it to a large extent for their livelihood, not only from the sale of fish, but from the catch of fish used for subsistence purposes.

Chairman McKellar. What is the size of the tribe? How many members does it have?

Mr. Brown. Our enrolled members of Warm Spring Tribe is 1,078 as of this date.

Senator Cordon. Mr. Brown, the estimate as to the fisheries' value goes to the total value which is shared by several tribes, does it not?

Mr. Brown. That is correct, Senator Cordon.

Senator Cordon. And these tribes have these rights by virtue of an ancient treaty between the Indian tribes of the Pacific Northwest and the Federal Government.

Mr. Brown. That is correct.

Senator Cordon. So that there can be no question as to their right to be compensated for the losses sustained there?

Mr. Brown. Yes, sir.

NEGOTIATIONS WITH GOVERNMENT

Senator Cordon. May I inquire as to whether, at the present time the Warm Spring Indians whom you represent, have been in consultation with the Corps of Army Engineers in the hope of reaching an agreement as to the value of the fishing rights?

Mr. Brown. That is true. The Army engineers last Friday made us an offer for our claims for damage and our claims for the loss of the fisheries, and we have made a counter offer.

Senator Cordon. So that negotiations are going forward with the view and the hope of concluding the matter by negotiation rather than by taking the other approach, which is always open, that of condemnation?

Mr. Brown. That is correct.

Chairman McKellar. What was the offer of the Indians, and what was the counter offer of the Army engineers?

Mr. Brown. In this meeting the Umatilla Indians and the Warm Spring Indians met and jointly asked for $20,000,000 for our claims for damages. The Army engineers made us two propositions. One was an offer of about $7,000,000—now, I may be mistaken about the amount, but I think it is correctly given in my statement—the offer was $7,230,000 on the basis of a capitalization at 3 percent, together with another offer—I don't have that figure in my mind. In addition to a monetary consideration our Indians desire fish for subsistence purposes.

Senator Cordon. Can you give it to us approximately?

Mr. Brown. It is in the neighborhood of over $8,000,000 on the basis of a capitalization at 2½ percent, between $8,000,000 and $9,000,000, as I recall it—$8,755,920, with strings attached to this offer.

Senator Cordon. In each instance the offers made by the Corps of Engineers represented the present capital value of the annual return to the Indians, as a result of their fishing at The Dalles, in one instance capitalized on a 3-percent basis and in the other instance capitalized on a 2½-percent basis?

VALUE OF ANNUAL FISH CATCH

Mr. BROWN. That is correct, Senator.

I want to point out that the Oregon State Fish Commission has printed a bulletin, and it states that the annual value of the fish catch by the Indians at this fishery is $700,000 a year, not taking into consideration, of course—which they point out—the subsistent catch during the open season, and the sale to tourists. We contend that that value is nearer $900,000, representing the difference between us and the Army engineers on the valuation of the fisheries.

Chairman MCKELLAR. All right, sir. Are there any other questions, gentlemen?

Senator CAIN. May I ask what is your relationship, Mr. Brown, between the Indian tribes whom you represent today and the Yakima Tribal Nations?

Mr. BROWN. Senator Cain, many of them have intermarried——

Senator CAIN. No; that is not what I had in mind. It happens that I have a very keen interest in this question of Indian rights. The Yakima Indian Nations were recently before this committee, and stated that they had an assumed claim of around $20,000,000. I wondered whether, in part, therefore, you are presenting the Yakima tribal point of view or if this is an entirely different question.

Mr. BROWN. I only represent my clients, Senator.

Senator CAIN. Thank you, sir.

Mr. BROWN. I represent the Warm Spring Indians. I think there is a difference of view as to who has the largest ownership in the fisheries.

Senator CAIN. I have another question, sir. Are you of the opinion that the construction of The Dalles Dam violates a treaty which was agreed to between your Indian tribes and the Federal Government many decades ago?

Mr. BROWN. I certainly do, and I think they should be compensated for the loss of their property.

Chairman MCKELLAR. Is a copy of that treaty in your statement?

Mr. BROWN. No, sir; it is not.

Chairman MCKELLAR. Will you put a copy of that into the record?

Senator CORDON. Would it be satisfactory on this if the record just included an excerpt from the treaty relating to the fishing rights, rather than the whole thing, as it is rather a sizable document, and only one paragraph deals with the fishing rights?

Chairman MCKELLAR. Yes.

Mr. BROWN. Senator McKellar, I have the excerpt from our treaty in our statement which deals with that particular point where we reserve the right to the fishery.

Chairman MCKELLAR. All right. That will be included in the record.

(The document referred to is included in the prepared statement.)

FUNDS LACKING FOR CONGRESSIONAL APPEARANCES

Senator CAIN. You have testified, Mr. Brown, that in years gone by the Warm Spring Indians have appeared before the Corps of Army Engineers and the House committee having jurisdiction over this dam on this question of dam construction.

I do not recall that the Warm Spring Indians have previously appeared before this Senate committee.

Mr. BROWN. That is true. We have not appeared before the Senate committee. We have appeared before the House committee; and before the Army engineers at every hearing, either by brief or in person.

Senator CAIN. In brief, will you indicate why your position has not previously been established before this committee?

Mr. BROWN. Well, expense, money, is one reason, Senator Cain.

Senator CAIN. You found that you had done all you could in coming across the country to the House hearings?

Mr. BROWN. That is true.

Senator CAIN. And that is the reason why you have not been before us in years gone by?

Mr. BROWN. This year we did not appear before the House committee, and we thought it our duty, therefore, to appear before the Senate committee.

Senator CAIN. You may derive some little satisfaction from this, although I seek not to personalize this. I am not familiar with all of the facts, as a Member of the Senate, but with reference to the Dalles Dam, should its construction be continued and completed, I am only one of a number of men and women in the Congress who will seek in every reasonable way to provide just compensation for the loss of any property that we establish legitimately belongs to American citizens, who constitute Indian tribes.

Mr. BROWN. I will comment on that in this way, Senator: that if it is necessary for the national defense of our country, that we should have it built, the speedier it can be built the better off this Nation will be.

Senator CAIN. I think that that is a very fair statement, sir. All that you are asking for is what is best for the development of the country, and you seek to acquire just compensation.

Mr. BROWN. That is right, sir.

Senator CAIN. I think you will find—well, a vast majority of the Congress—who will seek to make certain that that comes about.

Mr. BROWN. I want to state one other point. That is, that we ask for compensation, if the dam is built, paid at the present-day value. The Engineers should consider present-day value in just the same way, for example, that if you are before a court and condemn property, the jury or the judge considers the present-day value of the property, in arriving at just compensation.

That is what we ask for, namely, the present-day value of the property taken.

This will be a great sacrifice on the part of the Warm Spring Indians and the other Indians of our State. Our Indians particularly, depend on this fishery, more than on any other resource, for their living.

I want to point out to you that the Warm Spring Indians have never entered into any conflict or hostilities with the United States Government or its soldiers. During the Modoc Indian War, over 1,000 Regular and Volunteer soldiers were killed and the commanding officer at Klamath Falls, sent to our reservation an Army officer who recruited 74 of the Warm Spring Indians, forming a company of scouts who went to the Modoc battlefield and captured Captain Jack, their commander, and put an end to the war.

Now, these boys have always fought in every engagement since the coming of the white man, with the white man and they have taken their stand along with other patriotic American citizens on this project if it is necessary for national defense.

Senator CAIN. There is possibly only one comment I would differ with you about. You are speaking about history. I am not certain, but I would be inclined, from my understanding of history, to be on the side of the Indians in generations gone by, so I have great respect for those who continue to fight for their rights.

Chairman MCKELLAR. All right, sir. We are very much obliged to you for your statement.

We will be glad to hear from Mr. McFarland.

STATEMENT OF LOUIS McFARLAND, PENDLETON, OREG., APPEARING ON BEHALF OF THE CONFEDERATED TRIBES OF THE UMATILLA INDIAN RESERVATION

OPPOSITION TO THE DALLES TO PROTECT SALMON FISHING RIGHTS

Mr. MCFARLAND. Mr. Chairman and gentlemen of the committee, my name is Louis McFarland. My people, the Confederated Tribes of the Umatilla Indian Reservation, have sent me here to oppose further appropriations for The Dalles dam project.

We oppose this dam because it will destroy our last great salmon fishery reserved in our treaty of June 9, 1855, with the United States. I myself have fished there at Celilo Falls for many years and I know what great financial losses we will suffer if our fishing places are destroyed.

I am submitting to your committee a written statement by me and by the other tribal delegate, Luke Cowapeo, on behalf of our people. In that statement we point out that we have consistently opposed the construction of this dam. But we are told that the national defense makes it absolutely necessary. If that is true, then we only ask that Congress direct that our people be paid the fair value of their fishing places at Celilo Falls.

CELILO FALLS FISHERY

There is no other fishery like Celilo Falls which can take its place. So the only kind of settlement that we can make is a cash settlement.

During the last 6 months the United States Corps of Engineers has been studying the question of Indian treaty fishing rights at Celilo Falls. And more recently we have begun actual negotiations with the Portland district of the Corps of Engineers concerning actual payment for destruction of our fishing places. An offer has already been made by the Engineers which we consider too low. But the negotiations have been fair, and we are hopeful that we can reach a final settlement in the next few months which will be satisfactory to all parties.

In spite of these negotiations, however, we are compelled to register once more our sincere opposition to this proposed destruction of our historic fishing rights.

Mr. Chairman, I have a written statement which I would like to submit for the record.

Chairman McKellar. Without objection, that will be done.
(The statement referred to follows:)

STATEMENT OF THE CONFEDERATED TRIBES OF THE UMATILLA INDIAN RESERVATION, OREGON (WALLA WALLA, CAYUSE, AND UMATILLA TRIBES OR BANDS) IN OPPOSITION TO THE CONSTRUCTION OF THE DALLES LOCK AND DAM, THE DALLES, OREG.-WASH.

Mr. Chairman, I have been sent here by my people, the Confederated Tribes of the Umatilla Indian Reservation, Oreg., to oppose further appropriations for The Dalles Dam project. We oppose this dam because it will destroy our last great salmon fishery reserved in our treaty of June 9, 1855, with the United States.

A year ago my people also sent delegates to oppose appropriations for The Dalles Dam. They testified before the appropriations committee of the House of Representatives. I will not repeat everything that they said, as their testimony was printed and can be read by your committee.

My people feel the same way about The Dalles Dam this year as they did last year. They opposed it then, they oppose it now, and they always will oppose it, unless the Congress finds that it is absolutely necessary for national defense.

We have been told by many people that the dam must be built and our last good fishery destroyed, for national defense. We have no way to judge whether this is true. We must trust the Congress and the officials of the United States. We, too, believe in national defense. Our sons made fine records in World War II, and we have sons in Korea today. But we ask this committee, for the sake of our people who depend on this fishery for their living, and for the honor of the United States in observing its treaty obligations, not to build this dam unless the defense of our Nation requires it.

We know that our opposition to this project may fail, and that despite our objections the dam may be built. If the Congress finds that the national interest requires that the dam be built, and our fishery at Celilo Falls and vicinity destroyed, then we earnestly pray that Congress direct that our people be paid the fair value of their fishing places.

It is impossible to measure the value of the Celilo fishery in dollars. With us it is a perpetual source of food and income that has never failed us. Whatever else may happen to us, the salmon always run. If we lose Celilo we lose one of the last remnants of our ancient way of life.

If there were other fishing places equally good that could be given to us, we would rather have them than a money settlement. But we are told that we cannot fish in the fish ladders of the Dalles Dam, and we know of no other place than Celilo where we can catch salmon in large numbers. The most that we can do after Celilo is gone is to catch salmon at our other usual and accustomed stations, outside of the Dalles reservoir area, and there are not many of these stations left where many fish can be caught with our methods of fishing.

Since there is no other fishery like Celilo, the only kind of settlement that we can make would be a cash settlement. For the past 6 months the Portland district office of the United States Corps of Engineers have had two special officers, Mr. Percy Othus and Mr. J. W. Elliott, studying the question of Indian treaty fishing rights at Celilo and vicinity. They have studied the report of the Oregon Fish Commission on the Indian fishery at Celilo Falls and vicinity, and the report of the United States Fish and Wildlife Service on Indian fishing at Celilo in 1951. With the help of their legal officers, they have also studied the history of that fishery to determine which tribes used it prior to 1855, the year of the treaty.

We also have been told by Colonel Lipscomb and Mr. Othus and Mr. Elliott that they recognize the validity of the Umatillas' claim that the Celilo Falls fisheries were included in their usual and accustomed stations referred to in their treaty of June 9, 1855, with the United States.

There were some statements made this year to the House Appropriations Committee which gave the impression that the Corps of Engineers have done nothing toward negotiations about payment for destruction of Celilo Falls. This impression is not correct. Together with our friends, the Warm Springs Indians, who also live in Oregon, we have started to negotiate with the Portland district of the Corps of Engineers. We made a proposal that if The Dalles Dam is built we would settle the Umatilla and Warm Springs claims for the destruction of the Celilo fishery for a total of $20,000,000. Only last week, Colonel Lipscomb made the Umatilla and Warm Springs a return offer of $7,230,000 for a quitclaim of our damages resulting from The Dalles Dam. He said that his offer would not take

our other usual and accustomed fishing sites protected by treaty above and below The Dalles Dam and Reservoir.

Colonel Lipscomb has showed us figures that may prove that our first offer was too high for a final settlement price. We think that we can show him, too, that his first offer was too low for a final settlement price. But Colonel Lipscomb has promised us that the Corps of Engineers will deal with us fairly, and their dealings with us so far have been fair. If the Dalles Dam is voted money by this Congress, over our opposition, we believe that we can reach a final settlement for the destruction of our Celilo fishery within a few months, and Colonel Lipscomb thinks this is possible, too.

Respectfully submitted.

LOUIS MCFARLAND,
LUKE COWAPOO,
Authorized Tribal Delegates.

Chairman MCKELLAR. We are glad to have had you come before us.

Senator CAIN. You are a very distinguished person, and we are complimenting ourselves for having had a chance to hear you.

Mr. MCFARLAND. Thank you very much.

The old gentleman who accompanies me would like to say a few words, if he may be permitted to do so.

STATEMENT OF LUKE COWAPOO, UMATILLA INDIAN RESERVATION, PENDLETON, OREG.

PROTECTION OF CELILO FALLS FISHING RIGHTS

(Mr. McFarland interpreted Mr. Cowapoo's statement, which was made in the Indian language.)

Mr. MCFARLAND. Mr. Cowapoo says:

I am not a public speaker or a public man. I have no education, and you will have to excuse me for my blunders.

In brief his statement is that if there is any other way to offset the loss that the Indians will get, from this dam, he would like to see it done, because that is the only livelihood that the Indians knew from the time that he can remember, and that is, fishing in Celilo.

He says that you realize that these fisheries were there before your people ever hit that part of the country. He thinks it is a great injustice to the Indian people to build this dam there on the Columbia River.

Chairman MCKELLAR. Are there any further questions? If not, we are very much obliged to you.

I was very much interested in the conversation. I don't understand the language, but you certainly must be explaining it all right.

Mr. MCFARLAND. There are two groups of us Indians out there on the reservation. One they call the younger group, and I represent that, and Mr. Cowapoo represents the older group. We all have the same thought about this subject.

Chairman MCKELLAR. I represent the older group, too. Thank you very much.

Senator CAIN. Mr. Chairman, I would like to place in the record a resolution of the Rock Creek Tribe of the Yakima Indian Nation.

Chairman MCKELLAR. Without objection, that may be placed in the record.

(The resolution referred to follows:)

A RESOLUTION OF THE ROCK CREEK, OR KAH-MILT-PAH, TRIBE OF THE YAKIMA INDIAN NATION

To the Senate of the United States, through Hon. Warren Magnuson and Hon. Harry Cain, United States Senators from Washington:

Whereas the Rock Creek Tribe of the Yakima Indian Nation, met in Longhouse at Rock Creek, Klickitat County, Wash., on April 4, 1952, to take up the matter of further protest against the proposed construction of the Dalles Dam on the Columbia River; and

Whereas the Rock Creek Tribe wishes to call to the attention of the United States Senate certain facts in connection with the construction of the Dalles Dam, and its potential effect upon the Rock Creek and other Indian tribes in the areas adjacent to the portion of the Columbia River affected by the dam; and

Whereas the White Salmon, Klickitat, Celilo, and Rock Creek Indian Tribes were signatories to the Treaty of June 1855, wherein the Confederated Tribes of the Yakima Indian Nation were guaranteed the right of taking fish at all of the usual and accustomed places; and

Whereas at the present time the Columbia River Indians, of whom Rock Creek Tribe is a part, are almost completely dependent for their livelihood upon their fishing activities at Celilo Falls on the Columbia River, inasmuch as these Indians have no other sources of income to supplement the small allotments received from the Government; and

Whereas the Civil Functions Committee of the United States House of Representatives has recently issued figures which indicate that some 300 to 500 Indians each year exercise their treaty rights and take fish from the Columbia River at Celilo Falls, realizing therefrom approximately $900,000 annually; and

Whereas construction of the Dalles Dam would result in a direct abrogation of the Treaty of 1855, inasmuch as the fishing sites at Celilo Falls, one of the "usual and accustomed places," as defined in section 3 of that treaty, would be completely inundated and destroyed; and

Whereas the House of Representatives of the United States has recently denied a request by the President of the United States that the sum of $37½ million be appropriated toward the construction of the Dalles Dam; and

Whereas the Rock Creek Tribe is of the firm opinion that treaties entered into by the United States Government, whether with foreign nations or with tribes of "native Americans," are matters involving the integrity and honor of the United States Government, and should not be lightly cast aside and ignored, but should be strictly kept and performed, regardless of changing economic and social conditions; and

Whereas the Rock Creek Tribe is further of the opinion that construction of The Dalles Dam is not an economic necessity, but is, on the other hand, an ill-considered use of tax money; now, therefore, be it

Resolved by the Rock Creek Tribe of the Yakima Indians, 1. That the Rock Creek Tribe go on record, at this, its longhouse, as opposing either now or at any time in the future, the construction of a dam across the Columbia River at The Dalles, Oreg., or any other location upon the Columbia River which would result in the inundation and destruction of Celilo Falls.

2. That the Rock Creek Tribe go on record as further opposing any acts by the United States Government, which would tend to interfere with or deny full enjoyment of the fishing rights, or in any manner abrogate any of the provisions of the treaty of 1855, which was entered into by the Indians in good faith.

3. That this resolution be signed by Chief William Yallup, subchief Oscar Billy, Charlie Canapo, Johnnie Barney, and Howard Jim, and that copies thereof be sent to the United States Senate, the Senate Appropriations Committee, and Senators Magnuson and Cain.

ROCK CREEK TRIBE,
By WILLIAM (his mark) YALLUP, *Chief.*
OSCAR BILLY, *Subchief.*
CHARLIE (his mark) CANAPO.
JOHNNY BARNEY.
HOWARD JIM.
THOS. S. S. YALLUP, *Interpreter.*

Attest:

Mrs. LUCY BILLY,
Acting Secretary.

STATEMENT BY GOVERNMENT ON INDIAN TREATY FISHING RIGHTS

Senator CORDON. I would like to submit for the record a statement by the Army engineers with reference to the treaty with the Indians at The Dalles, and Celilo Falls.

Chairman MCKELLAR. Without objection, the statement will be inserted in the record.

(The statement referred to follows:)

INDIAN TREATY FISHING RIGHTS

By treaties of June 1855 with the United States, the Yakima Nation, Umatilla, and Nez Perce Indians and the Confederated Warm Springs Tribes were secured—

"The exclusive right of taking fish in all the streams where running through or bordering said reservation is further secured to said Indians; as also the right of taking fish at all usual and accustomed places in common with citizens of the Territory; and of erecting temporary buildings for curing, together with the privilege of hunting, gathering roots and berries, and pasturing their horses and cattle upon open and unclaimed land."

The rights of the Warm Springs Indians were relinquished by treaty in 1865. The Mid-Columbia Indians are not covered by any treaty of record; however, they claim certain inherent and perpetual rights to fish on the Columbia River. The Yakima, Umatilla, Nez Perce, and Warm Springs Indians have intermarried and these tribes in turn have intermarried with the Columbia River Indians including the Celilo, Cascade, Klickatat, and Wasco tribes. The descendants of all these tribes have fished for many years at Celilo Falls and other places. The population of the Indian nations and tribes in 1950 was about 7,800.

Fishing sites of the Indians at Celilo Falls and its vicinity will be affected by construction or will be inundated by the Dalles Reservoir. Investigation by the Fish Commission of Oregon indicated that the number of fishing sites at Celilo Falls and also the number of Indians fishing vary from year to year. In 1948 the Indians maintained 79 stationary platforms and 93 movable dip-net stations and numerous fixed and movable stations were in use in other locations from the Big Eddy to Celilo Falls.

From 1 to 10 Indians take fish by dip net at each of these stations. The Oregon Fish Commission estimated that about 2,000 Indians fish at these sites, taking fish for subsistence and retail sale as fresh food and for sale at commercial canneries. Estimates by other sources indicate that as many as four or five thousand Indians are engaged in or partially dependent on this fishery.

The catch of the Indians consists of a subsistence catch which is eaten fresh or dried for use out of season, and a commercial catch which is sold to canneries or tourists. The commercial catch is taken entirely in open commercial season established by the States of Oregon and Washington. The subsistence catch is taken largely outside the commercial season. The amount of the commercial catch can be estimated on the basis of cannery records, plus estimates as to the extent of the catch which is sold fresh to tourists. Cannery records are available for many years and have been made the basis of special studies by the Oregon Fish Commission. The basis for estimating the subsistence catch is a 4-year record of the Oregon Fish Commission and counts of the Fish and Wildlife Service begun in 1950. The best current estimate of these annual catches within the area to be flooded by the Dalles Dam are about 500,000 pounds per year for subsistence and 2,000,000 pounds per year for commercial purposes.

The Corps of Engineers has been studying the problems relative to reaching an equitable settlement with the Indians for the loss of their fishing grounds which will be inundated by the Dalles Dam since money was first made available for planning this project. As soon as funds were made available for constructing the Dalles Dam, negotiations were undertaken with the Indians so that an early and equitable settlement could be reached.

By letter, dated October 22, 1951, the district engineer, Corps of Engineers at Portland, Oreg., informed the Indians who have fishing rights which will be affected as follows:

"This office recognizes that the dam construction will in time submerge the traditional Indian fishing grounds at Celilo Falls with attendant loss to Indian

tribes and individuals. This office is further aware of the obligations on the part of the Federal Government arising out of treaties with the various Indian tribes, and declares its intentions to negotiate with the affected Indians in the spirit of good faith to make them whole for actual losses suffered. Negotiations will be initiated and extended on the basis that considerations to the Indians will be founded on factors which will lead to a fair settlement with the Indians.

"* * * I want to assure your honorable council and all other individuals of the tribe of my desire and intention to bringing the negotiations to a mutually satisfactory conclusion as soon as can be intelligently done."

Many meetings have been held in recent months with council members of the Indian tribes and their representatives as a part of the preliminary negotiations of a settlement. In order to facilitate negotiations, each tribe was requested to designate members to represent the tribe. Several of the tribes have appointed their official delegates to negotiate with the Corps of Engineers. However, one tribe has indicated that it would not appoint representatives to negotiate until after it has been determined whether or not Congress will appropriate additional funds for construction for fiscal year 1953.

Discussions with the Indians have indicated that they do not want to leave the fishing sites until necessary. If the funds requested for fiscal year 1953 are appropriated and construction is carried out as scheduled, the fishing sites will not be inundated until after the fall runs in 1956. Owing to the many complicated problems on which agreement is necessary, the negotiations cannot be completed quickly. However, there is ample time for completing the negotiations and making an equitable settlement before the fishing sites are inundated.

Discussions with the Indians have indicated also that they would not desire to negotiate a settlement for their fishing rights if construction of The Dalles project is not continued. Accordingly, it appears that curtailment of construction would merely continue the problem of completing the negotiation and effecting an equitable settlement. Consequently, the effect of such curtailment will probably be to delay early completion of the Dalles project which is urgently needed, without facilitating negotiations with the Indians relative to the fishing rights.

Senator CORDON. I want to thank the chairman for his patience and indulgence.

Chairman MCKELLAR. I have been very much interested in what they have had to say. That is the first time I ever heard the Indian language.

Senator CAIN. They know exactly what they want to say, sir.

Chairman MCKELLAR. I have received a letter from Senator Watkins relative to the fishing rights of certain Indian tribes which would be destroyed by construction of The Dalles Dam. This correspondence will appear in the record at this point.

(The letter referred to follows:)

UNITED STATES SENATE,
COMMITTEE ON THE JUDICIARY,
April 10, 1952.

Senator KENNETH MCKELLAR,
Chairman, Senate Appropriations Committee,
United States Senate, Washington, D. C.

DEAR SENATOR MCKELLAR: I have received a letter from Mr. Alex Saluskim, chairman of the tribal council of the Yakima Indian Agency, Toppenish, Wash., in connection with a problem they have relative to their fishing rights.

May I suggest that the committee look into the matter which is brought to our attention as a result of this letter.

Sincerely,

ARTHUR V. WATKINS.

YAKIMA INDIAN AGENCY,
Toppenish, Wash., March 19, 1952.

Hon. ARTHUR V. WATKINS,
Senate Office Building, Washington, D. C.

MY DEAR SENATOR WATKINS: We are sending to you enclosed with this letter a copy of our statement in which we appeal to the people of the United States to save our vested fishing rights at Celilo Falls on the Columbia River. These rights were guaranteed to us in the treaty of June 9, 1855, between the Yakima Indian Nation and the United States of America. The Army engineers have been authorized to build a power dam at The Dalles, Oreg., which when completed will flood Celilo Falls and destroy our fishing rights.

The construction work on the Dalles Dam has just begun and it can be discontinued without any great economic loss. This dam will cause irreparable damage to the welfare of our people and besides is an economically unsound project. We therefore appeal to you to vote against the 1952 appropriation and all further appropriations for the Dalles Dam.

Sincerely yours,

THE YAKIMA INDIANS,
By ALEX SALUSKIN,
Chairman, Tribal Council.

Senator MCKELLAR. At the request of Senator Cordon I will insert in the record at this point a letter in regard to The Dalles project from the Defense Electric Power Administration expressing its opinion as to the need for the project.

(The letter referred to follows:)

UNITED STATES DEPARTMENT OF THE INTERIOR,
DEFENSE ELECTRIC POWER ADMINISTRATION,
Washington, D. C., May 20, 1952.

Hon. KENNETH MCKELLAR,
United States Senate, Washington, D. C.

MY DEAR SENATOR MCKELLAR: Defense Electric Power Administration is pleased to express its opinion on the need for The Dalles project as requested in your letter of May 19, 1952.

I am sure you and members of the Appropriations Committee, United States Senate, are aware of the serious shortage in the Pacific Northwest. Adequate amounts of power are not and for several years have not been available for existing industries and for general public consumption. Because of this the aluminum and other industries located in this area had to curtail operations last year resulting in the loss of production needed for the defense effort. In recognition of this condition, Defense Electric Power Administration has consistently taken vigorous steps to assist all power suppliers in expediting their construction programs in an effort to relieve the power shortage at the earliest possible date. However, recent studies indicate the programed additions of all utilities will not be sufficient to assure an adequate power supply in the near future. In fact, a critical shortage seems certain for the water-control periods of 1952–53 and 1953–54, assuming every project now scheduled for completion by that date is not delayed. Also, current studies indicate a continuing shortage throughout the winter of 1955–56 if projects are constructed on present schedules.

The Dalles project, recently started, is an outstanding project which can make a significant and unique contribution to the power-supply situation in 1957, both because of the increase in power capacity and because of its close proximity to the heavy loads in the coastal areas.

It is, of course, vital also that there be no delay in completion of other major projects well along in construction such as McNary, Chief Joseph, and Albeni Falls. In fact, it is essential to maintain present schedule of all projects, both Federal and non-Federal, in order to meet power requirements.

Sincerely yours,

JAMES F. FAIRMAN, *Administrator.*

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STATEMENT OF R. H. McELHANEY, PRESIDENT, WALTON-MOHAWK IRRIGATION AND DRAINAGE DISTRICT, YUMA COUNTY, ARIZ.

PAINTED ROCK DAM, GILA RIVER PROJECT, ARIZONA

Senator HAYDEN. This witness will present a statement for the construction of a flood-control dam on the Gila River which is required by a treaty between the United States and Mexico which requires the construction of this dam. The failure to construct it would be a major disaster.

I would like to have Mr. McElhaney place his statement in the record to indicate what the situation is.

Mr. MCELHANEY. Mr. Chairman, I would first like to place in the record, before I present my statement, three letters.

The first is a letter from Assistant Secretary of State, Jack K. McFall, addressed to Senator Hayden under date of April 9, 1951.

The second is from Assistant Secretary of the Interior, William E. Warne, addressed to Senator Hayden under date of May 7, 1951.

The third is from Commissioner G. W. Lineweaver, of the Bureau of Reclamation of the Department of the Interior, addressed to Senator Hayden and dated July 6, 1951.

I would like to ask at this point that they be placed in the record.

Chairman MCKELLAR. Without objection, they will be placed in the record at this point.

(The letters referred to follow:)

APRIL 9, 1951.

The Honorable CARL HAYDEN,
United States Senate.

MY DEAR SENATOR HAYDEN: I have received your letter dated March 29, 1951, requesting advice regarding the need and desirability for initiating at this time preliminary work required in the construction of the Painted Rock Dam on the Gila River in Arizona.

As you indicate in your letter under acknowledgement, the interest of the Department and of the United States Section of the International Boundary and Water Commission, United States and Mexico, in this proposed dam derives from the fact that the project bears directly upon problems of the lower Colorado River for which the Commission is responsible under the Water Treaty of 1944 with Mexico. These problems relate to (1) the construction of works, as provided for by article 12 (a) of the treaty, to protect United States lands from such flood damage as may result from the Morelos diversion dam has been constructed by Mexico in the limitrophe section of the Colorado River, and (2) the completion of plans, as provided for by article 13, for flood-control works on the Colorado River between the Imperial Dam and the Gulf of California.

With reference to article 12 (a) flood-control works relating to the Morelos diversion dam, agreement has been reached with Mexico with regard to the construction of levees upstream from this dam to provide adequate protection to United States lands with that structure in operation. This agreement, set forth in minute No. 195 adopted by the International Boundary and Water Commission on May 6, 1950, and subsequently approved by the Governments of the United States and of Mexico, a copy of which is enclosed herewith, contemplates two increments of levee construction work: First, that necessary even without the Morelos Dam, for which the United States is responsible, and, second, that necessitated by the Morelos Dam for which Mexico is responsible. Mexico has established in this country the necessary advance credit of $2,000,000 to be applied against its share of the construction costs and the General Appropriation Act for fiscal year 1951 provides an initial appropriation to the Department of the Interior for performance of the United States increment of the work. All construction work will be performed by the Bureau of Reclamation, but under the supervisory control of the United States Section of the Commission in respect to the Mexican increment thereof.

Final plans for the levee construction upstream from the Morelos diversion dam are now being developed by the Bureau of Reclamation in collaboration with the United States Section. However, since the Painted Rock Dam has now been authorized, the plans are being prepared on the basis of a design flood of 140,000 second-feet at Yuma, Ariz., which the interested agencies of the United States have agreed would be used in the event that the Painted Rock Dam should be built. Without a flood-control dam on the Gila River, levee construction would have to be performed on the basis of a design flood of 310,000 second-feet which could obtain under presently existing conditions.

It is, therefore, highly important, particularly from the standpoint of the domestic interests of the United States, that the Painted Rock Dam be constructed as soon as possible.

With reference to the article 13 flood-control works between Imperial Dam and the Gulf of California, the studies and investigations by the Commission preliminary to the preparation of plans for these works are now well advanced and the Commission is making every effort to complete its report and recommendations to the Governments of the United States and of Mexico as soon as possible. The Department is informed that these plans by the Commission are being formulated on the basis of construction of the Painted Rock Dam.

Therefore, the early completion of this structure is also an important factor in the broad problem of providing adequate flood control on the lower Colorado River.

For the above reasons the Department is strongly of the view that the construction of the Painted Rock Dam should be initiated as soon as possible and carried forward expeditiously.

Under date of September 14, 1950, the Department wrote to the Secretary of the Army, with copies transmitted to the Secretary of the Interior and to the Director of the Bureau of the Budget, setting forth substantially the same facts as are contained herein and expressing the hope that, since the project has been authorized by the Congress, appropriations may be obtained and construction expedited as much as possible.

Because of their interest in this project, I am taking the liberty of transmitting a copy of your letter under acknowledgment and of this reply thereto to the Chief of the Corps of Engineers and to the Secretary of the Interior.

Sincerely yours,

JACK K. MCFALL,
Assistant Secretary
(For the Secretary of State).

Enclosure: Minute No. 195, May 6, 1950.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., May 7, 1951.

Hon. CARL HAYDEN,
United States Senate, Washington, D. C.

MY DEAR SENATOR HAYDEN: The State Department has courteously furnished us a copy of Assistant Secretary Jack K. McFall's letter of April 9, 1951, to you in response to yours of March 29, concerning the desirability for initiating at an early date construction of the Painted Rock Dam on the Gila River in Arizona.

Your interest in the Painted Rock Dam which has been authorized for construction by the United States Engineers is appreciated by this Department, and we wish to advise you that we are completely in accord with the explanation of the situation on the lower Gila and Colorado Rivers as presented to you by the Department of State. We believe, however, that some additional facts concerning the levee construction program to be shortly initiated by the Bureau of Reclamation in the vicinity of Yuma, Ariz., may be helpful to you in further consideration of the problem.

As you have been informed, the studies of flood conditions on the lower Gila and Colorado Rivers, which were developed by the Bureau of Reclamation in collaboration with the United States Section of the International Boundary and Water Commission, showed that a levee system bordering these rivers would have to be able to withstand a design flood of 310,000 second-feet in the event the Painted Rock Dam were not constructed or a design flood of 140,000 second-feet with the Painted Rock Dam constructed. Following the authorization of the flood-control dam and in keeping with the agreement set forth in minute No. 195,

as adopted by the International Boundary and Water Commission on May 6, 1950, and subsequently approved by the Governments of the United States and Mexico, the Bureau of Reclamation has prepared plans for the construction of a levee system upstream from the Morelos diversion dam capable of containing a design flood of 140,000 second-feet at Yuma, on the assumption that the Painted Rock Dam would be constructed, if possible, simultaneously with the levees.

Specifications for construction of the improvements to the levee system in the vicinity of Yuma were issued on April 2. A contract for the work is scheduled to be awarded in May and construction operations are expected to get under way within a month thereafter. If funds are available to carry the work forward as now scheduled, the construction of the levee system for the protection of the lands of the Yuma project and other fertile areas lying along the lower reaches of the Colorado and Gila Rivers will be completed by the end of fiscal year 1953.

It is, therefore, vitally important that construction of the Painted Rock Dam be completed, or at least sufficiently far advanced, by the time the levee work is finished to safely contain any future floods which would endanger the developed areas along the lower reaches of the Gila and Colorado Rivers.

We are forwarding a copy of this letter to the Chief of the Corps of Engineers and to the Secretary of State to advise them of our views regarding the urgent need for the Painted Rock Dam.

Sincerely yours,

WILLIAM E. WARNE,
Assistant Secretary of the Interior.

DEPARTMENT OF THE INTERIOR,
BUREAU OF RECLAMATION,
Washington, D. C., July 6, 1951.

Hon. CARL HAYDEN,
United States Senate, Washington, D. C.

MY DEAR SENATOR HAYDEN: In accordance with your request of Operation and Maintenance Director Eaton, I am pleased to furnish you with additional information concerning the urgency of an early start on construction of Painted Rock Dam on the Gila River in Arizona. This will supplement Assistant Secretary Warne's letter of May 7, 1951, a copy of which is enclosed for your ready reference.

As you were advised in that latter, following authorization for the construction of Painted Rock Dam in the Flood Control Act of 1950, and subsequent agreement between the United States and Mexico, it was possible to design a levee system, to be constructed by the Bureau of Reclamation along the lower Gila and Colorado Rivers, to withstand a design flood of 140,000 cubic feet per second, on the assumption that Painted Rock Dam would be constructed, if possible, simultaneously with the levees. Without the construction of Painted Rock Dam, the levee system bordering these rivers would have needed to be able to contain a flood of 310,000 cubic feet per second.

The agreement with Mexico was reached in accord with article 12 (a) of the water treaty of 1944. Under the agreement, Mexico has established in this country the necessary advanced credit of $2,000,000 to pay its share of the total construction cost of the levees, estimated at $6,360,000.

An initial appropriation of $450,000 for the United States share of the cost was included in the Department of the Interior Appropriation Act for fiscal year 1951, and the first major contract, which provides for reconstruction of 27 miles of levee between Yuma and the Mexican boundary on the Arizone side of the Colorado River, was recently awarded. An appropriation request in the amount of $2,245,000 was included in the President's budget for fiscal year 1952, for continuation of this program.

The savings to the United States through construction of this levee system to contain a flood of 140,000 second-feet at Yuma instead of 310,000 second-feet, which is a direct benefit derived through authorization of Painted Rock Dam, are estimated to be $3,791,000.

If funds are appropriated to carry the work forward as now scheduled, the construction of the levee system will be completed by the end of fiscal year 1953. In our opinion, it is vitally important that construction of Painted Rock Dam be completed, or at least sufficiently far advanced, by that time in order to contain safely any future floods which would endanger the Yuma area.

In addition, under the Bureau's program for irrigation development of 75,000 acres of land in the Wellton-Mohawk area of the Gila project, it is planned to

bring in the first block of new lands in fiscal year 1953, with additional lands to be brought under irrigation each year thereafter to 1958. The flood protection that will be provided to the Wellton-Mohawk area is another reason for an early start of construction on Painted Rock Dam.

Sincerely yours,

G. W. LINEWEAVER,
Acting Commissioner.

INVESTIGATION OF PAINTED ROCK DAM SITE

Mr. MCELHANEY. Mr. Chairman, my name is R. H. McElhaney, and I am president of the Walton-Mohawk irrigation and drainage district located in Yuma County, Ariz. I am appearing here today representing our project, the city of Yuma, Ariz., the Yuma County Water Users' Association, the North Gila Valley irrigation district, and the Yuma irrigation district.

All of the irrigation districts in Yuma County are subject to serious damage from floods if the Painted Rock Dam and Reservoir is not constructed. The Painted Rock Dam and Reservoir was authorized in 1950, and in 1952 a request of $75,000 was made to carry on investigation work alone. There has been no preliminary planning.

Chairman MCKELLAR. There has been no construction as yet?

Mr. MCELHANEY. There has been no construction as yet, sir, and we are not asking for any construction funds at this time. We are asking for money to do the preliminary planning work.

We realize that certain limitations have been placed upon new construction, and we are not here to urge any appropriation for the beginning of construction this year. We are asking, however, the sum of $75,000 as requested by the Corps of Engineers, in order to do the detailed planning for the dam.

This amount was requested by the Corps of Engineers in 1952, but was eliminated by the Bureau of the Budget. We feel that it is most important that this planning work be done at this time; and, therefore, we are making the request for an appropriation of $75,000.

If you have any questions, I will be happy to answer them.

Senator HAYDEN. I think the matter is adequately covered in Mr. McElhaney's statement. However, I just would like to explain the situation, Mr. Chairman.

GILA RIVER FLOODS

The Gila River does not flood, excepting at long intervals. When it does flood, it is a serious calamity. The levees constructed to protect Yuma County and the levees constructed to protect the Imperial Valley in Mexico are not designed to carry the flood. It was a flood on the Gila River that broke the dam and let the water flow into the Imperial Valley, flooding that area.

The Mexican Government has built a dam partly in the United States and partly in Mexico, which is menaced by a flood on the Gila River.

Now, this year we have had substantial rains, and our reservoirs have more water in them than they have had in many years. If a flood comes down, it is going to do tremendous damage in this area. I believe that it is high time we plan the project.

Chairman McKellar. Thank you, Mr. McElhaney. Your statement will be included in the record at this point.

(The statement referred to is as follows:)

STATEMENT OF R. H. McELHANEY IN RE PAINTED ROCK RESERVOIR ON THE GILA RIVER

My name is R. H. McElhaney. I am president of the Wellton-Mohawk irrigation and drainage district located in Yuma County, Ariz. I am appearing here today representing our project, the city of Yuma, Ariz., the Yuma County Water Users' Association, the North Gila Valley irrigation district, and the Yuma irrigation district.

The city of Yuma area has a population of about 20,000 people. The main transcontinental line of the Southern Pacific Railroad and United States Highway 80 cross the Colorado River at Yuma. The four irrigation districts just mentioned represent 140,000 acres of the finest farm land in the United States. For example, on the 50,000 acres of the Yuma project last year the average gross yield was $254 per acre, the highest return of any project in the United States.

We appreciate the opportunity to be able to discuss with you for just a few minutes Painted Rock Dam and Reservoir. This reservoir was authorized by Congress in the 1950 Flood Control Act. The project would be located on the Gila River and would consist of an earth-fill dam with a storage capacity of 2,400,000 acre-feet. The protection would be provided for the following lands: 198,000 acres along the Gila River; 82,000 acres along the Colorado River; 80,000 acres in Imperial Valley, Calif.; the communities of Yuma, Somerton, and Gadsden, the irrigation facilities of the four districts mentioned above.

We realize that certain limitations have been placed upon new construction, and we are not here to urge an appropriation for the beginning of construction this year. We are asking, however, the sum of $75,000 as requested by the Corps of Engineers in order to do the detailed planning for the dam. This amount was requested by the Corps of Engineers in 1952 but was eliminated by the Bureau of the Budget.

This dam is most important to the United States because it is in a different category from the ordinary flood-control project. In 1944 the United States and Mexico entered into a treaty which was ratified by the United States Senate. Pursuant to the treaty a diversion dam and levees were to be constructed downstream at the expense of Mexico. This work has been carried out and completed by Mexico. The design of those structures was predicated upon the construction of Painted Rock Reservoir by the United States and the flood reduction to be accomplished by it. The agreement outlined in Minute No. 195 was adopted by the International Boundary and Water Commission on May 6, 1950, and subsequently approved by the United States and Mexico. Without Painted Rock Dam and Reservoir the flood levees at Yuma, Ariz., would have to be sufficient to carry a flood of 310,000 second-feet. Because Congress authorized Painted rock Reservoir in 1950, Mexico and the United States designed and built the entire Colorado River front levee system upon the flood design of 140,000 second-feet because of the flood reduction of Painted Rock Reservoir. Therefore, unless Painted Rock Reservoir is constructed at an early date, the entire Colorado River levee system and all of the farm and urban area outlined above is in danger. A copy of a letter from the Department of State outlining their views upon this matter and urging the construction of the reservoir will be filed with the committee for inclusion in the record.

There are four reclamation projects downstream from the reservoir site which would also be protected from damaging floods. This reservoir is also part of the over-all plan of the United States for containing and controlling the Colorado River, into which the Gila River flows just above Yuma, Ariz. Two letters from the Department of Interior outlining its views and urging the construction of the reservoir will be filed with the committee for inclusion in the record.

The upstream reservoirs of the Gila River are now 80 percent full. Another winter of rainfall such as we have had this winter will send raging torrents down the Gilla River, destroying much of the land, homes and towns of the areas which I have already mentioned. I sincerely urge upon you gentlemen the appropriation of $75,000 to allow the construction plans for this authorized project to be drawn.

Thank you for this opportunity to be heard, and I would be glad to answer any questions which you might have.

Senator CORDON. May I suggest, Mr. Chairman, that the reporter place the documents submitted by Mr. McElhaney and his statement just made with reference to the Gila River in the record at the end of the other testimony with respect to the Pacific Northwest projects.

Senator HAYDEN. That is right. It ought not to be mixed up.

Chairman MCKELLAR. All right. That will be done.

The committee will be in recess until 11 tomorrow morning.

(Whereupon, at 1:30 p. m., Wednesday, May 14, 1952, the committee recessed, to reconvene at 11 a. m., Thursday, May 15, 1952.)